HITACHI

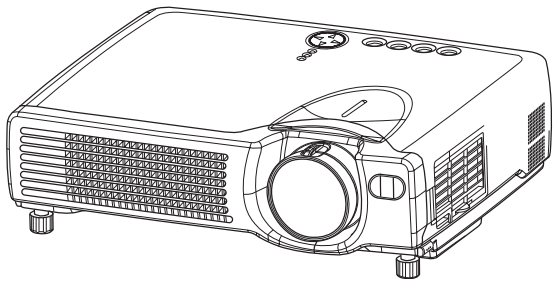
SERVICE MANUAL

SM0524

CPS317(C3S3)
CPX327(C3XM3)
EDS3170(C3S3)
EDX3270(C3XM3)
EDS3170A(C3S3E)
EDX3270A(C3XM3)
ED-X3250AT(C3X3ET)
EDX3280AT(C3XM4ET)

⚠ Warning

The technical information and parts shown in this manual are not to be used for: the development, design, production, storage or use of nuclear, chemical, biological or missile weapons or other weapons of mass destruction; or military purposes; or purposes that endanger global safety and peace. Moreover, do not sell, give, or export these items, or grant permission for use to parties with such objectives. Forward all inquiries to Hitachi Ltd.



Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Hitachi Multimedia LCD Projector. Be sure to read cautionary items described in the manual to maintain safety before servicing.

Service Warning

1. When replacing the lamp, avoid burns to your fingers. The lamp becomes very hot.
2. Never touch the lamp bulb with a finger or anything else. Never drop it or give it a shock. They may cause bursting of the bulb.
3. This projector is provided with a high voltage circuit for the lamp. Do not touch the electric parts of power unit (main), when turning on the projector.
4. Do not touch the exhaust fan, during operation.
5. The LCD module assembly is likely to be damaged. If replacing the LCD module assembly, do not hold the FPC of the LCD module assembly.
6. Use the cables which are included with the projector or specified

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Multimedia LCD Projector

January 2003 Digital Media Division

CPS317, EDS3170, EDS3170A, CPX327, EDX3270, EDX3270A

1. Features

- 1,500 ANSI lumens, 2.7kg(6lbs)
- Full connectivity
- Easy and flexible keystone adjustment
- My screen
- Wide angle lens
- Low noise

2. Specifications

		CPS317/EDS3170 /EDS3170A	CPX327/EDX3270/EDX3270A
Liquid crystal panel	Drive system	TFT active matrix	
	Panel size	0.7 inches	
	Number of pixels	800 (H) × 600 (V)	1024 (H) × 768 (V)
Lamp		150W UHB	
Video input	System	NTSC, PAL(BGDHI), SECAM, PAL-M, PAL-N, NTSC4.43, PAL60	
	Level	Composite 1.0±0.1Vp-p (75Ω termination)	
		S-video Y : 1.0±0.1Vp-p (75Ω termination) C : 0.286±0.1Vp-p (NTSC burst signal, 75Ω termination) 0.3±0.1Vp-p (PAL/SECAM burst signal, 75Ω termination)	
		Component Y : 1.0±0.1Vp-p (75Ω termination) C_B/C_R : 0.7±0.1Vp-p (75Ω termination) P_B/P_R : 0.7±0.1Vp-p (75Ω termination)	
RGB input / output	Analog RGB	0.7Vp-p (75Ω termination)	
	Sync.	TTL level	
Audio	Input	200mVrms, 47kΩ	
	Output	200mVrms, output impedance 1kΩ	
Speaker output		1.0W (mono)	
Power supply		AC100~120V/2.7A, AC220~240V/1.3A	
Power consumption		240W	
Dimensions		295 (W) × 87.5 (H) × 231 (D) mm	
Weight		2.74kg (6.04lbs)	
Temperature range		Operation : 0~35°C Storage : -20~60°C	
Accessories		Remote control transmitter × 1 RGB cable × 1 Video/Audio cable × 1 USB cable × 1	POWER cord × 3 Battery × 2 Carrying bag × 1 (CP Models Only) User's manual (with Safety Instructions)× 1

Features

2,000 ANSI lumens, 2.7kg(6lbs) EDX3280AT, (1,200 lumens, 2.7kg(6lbs) EDX3250AT)

Specification

		EDX3280AT/EDX3250AT
Liquid crystal panel	Drive system	TFT active matrix
	Panel size	0.7 inches
	Number of pixels	1024 (H) × 768 (V)
Lamp		150W UHB
Video input	System	NTSC, PAL(BGDHI), SECAM, PAL-M, PAL-N, NTSC4.43, PAL60
	Level	Composite 1.0 ±0.1Vp-p (75 Ω termination)
		S-video Y : 1.0 ±0.1Vp-p (75 Ω termination) C : 0.286 ±0.1Vp-p (NTSC burst signal, 75 Ω termination) 0.3 ±0.1Vp-p (PAL/SECAM burst signal, 75 Ω termination)
RGB input / output	Analog RGB	0.7Vp-p (75 Ω termination)
	Sync.	TTL level
Audio	Input	200mVrms, 47kΩ
	Output	200mVrms, output impedance 1kΩ
Speaker output		1.0W (mono)
Power supply		AC100~120V/2.7A, AC220~240V/1.3A
Power consumption		240W
Dimensions		295 (W) × 87.5 (H) × 231 (D) mm
Weight		2.74kg (6.04lbs)
Temperature range		Operation : 0~35°C Storage : -20~60°C
Accessories		Remote control transmitter × 1 RGB cable × 1 Video/Audio cable × 1 USB cable × 1 POWER cord × 3 Battery × 2 User's manual (with Safety Instructions)× 1

Difference with the conventional model

The base model of EDX3280AT is EDX3270A. The liquid crystal panel is the main change from EDX3270A. The main differences with the base model are described in the following table.

● The main differences with the conventional model

No.	Contents	Difference		Note
		ED-X3270A	**ED-X3280AT**	
1	Features	Brightness 1,500 ANSI lumens (A catalog may have 1,700 ANSI lumens)	Brightness 2,000 ANSI lumens	Please see 2 page.
2	Specifications	Accessories: Power cord × 1	Accessories: Power cord × 3	Please see 2 page.
3	Parts list	Option Lamp: DT00521(ED-X3270A) Others	Option Lamp: DT00511(ED-X3280AT) Others	Please see 4 page.

Only difference is described. Please refer to a ED-X3270A service guide except the above-mentioned difference.

● Lamp (Option Lamp: DT00511(ED-X3280A))

HIGH VOLTAGE
HIGH TEMPERATURE
HIGH PRESSURE

Before replacing the lamp, check the serial number of the replacement lamp bulb (sold separately: DT-00511 for ED-X3280), then contact your local dealer. Before replacing the lamp, turn off the power, and unplug the power cord, then wait at least 45 minutes, in order to ensure that the lamp is properly cooled. Removing the lamp bulb while it is still hot could cause burns, or cause the lamp bulb to burst.

Difference with the conventional model

The base model of ED-X3250AT is ED-X3270A. The liquid crystal panel is mainly changed from ED-X3270A. The main differences with the base model are described in the following table.

● The main differences with the conventional model

No.	Contents	Difference		Note
		ED-X3270A	**ED-X3250AT**	
1	Features	Brightness 1,500 ANSI lumens (A catalog may have 1,700 ANSI lumens)	Brightness 1,200 ANSI lumens	
2	Specifications	Accessories: Power cord × 1	Accessories: Power cord × 2	
3	Parts list	LCD/LENS PRISM ASS'Y: UX09286 Others	LCD/LENS PRISM ASS'Y: UX09287 Others	

Only difference is described. Please refer to a ED-X3270A service guide except the above-mentioned difference.

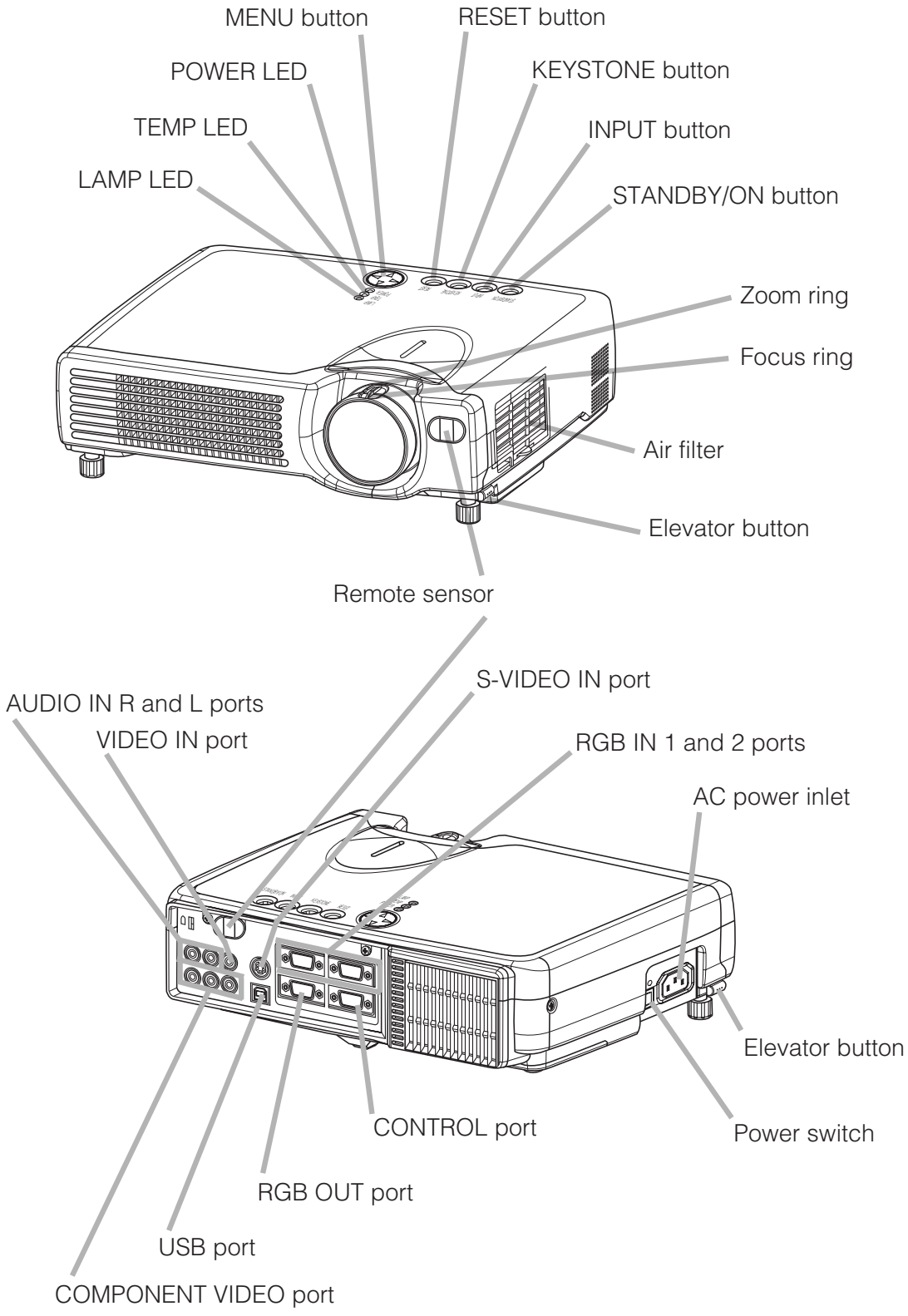
● Lamp (Option Lamp: DT00521(ED-X3250AT))

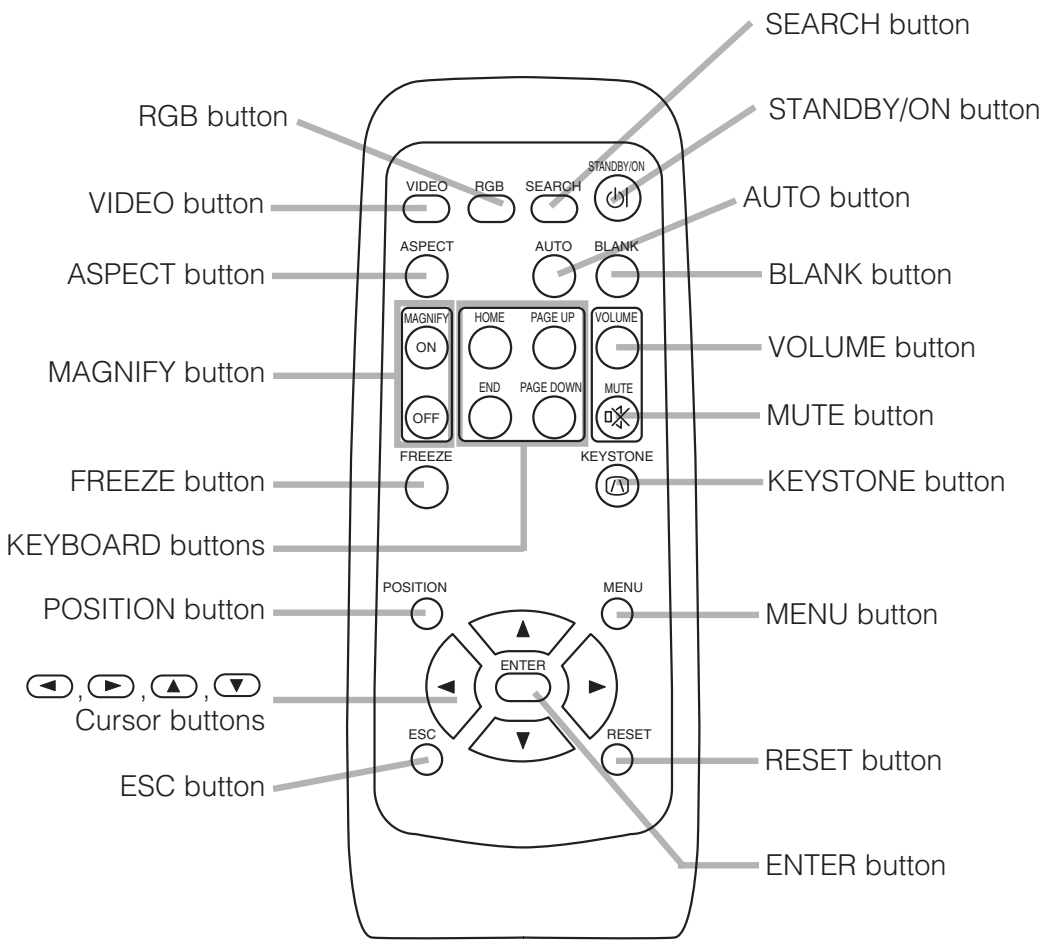
HIGH VOLTAGE
HIGH TEMPERATURE
HIGH PRESSURE

Before replacing the lamp, check the serial number of the replacement lamp bulb (sold separately: DT-00521 for ED-X3250AT), then contact your local dealer. Before replacing the lamp, turn off the power, and unplug the power cord, then wait at least 45 minutes, in order to ensure that the lamp is properly cooled. Removing the lamp bulb while it is still hot could cause burns, or cause the lamp bulb to burst.

3. Names of each part

● Parts names





Remote control transmitter

4. Adjustment

4-1 Before adjusting

4-1-1 Selection of adjustment

When any parts in the table 4-1 are changed, choose the proffer adjusting items with the chart.

Table 4-1: Relation between the replaced part and adjustment

Replaced part	Adjustment				
	Ghost (Chap.4-2)	Flicker (Chap.4-3)	PSIG/NRSH (Chap.4-4)	White balance (Chap.4-5)	Color uniformity (Chap.4-6)
Dichroic optics unit	○	○	×	△	△
LCD/LENS prism assembly	○	○	○	○	○
PWB assembly drive	○	○	○	○	○
Lamp unit assembly	△	△	×	△	△

○: means need for adjustment. ×: means not need for adjustment.

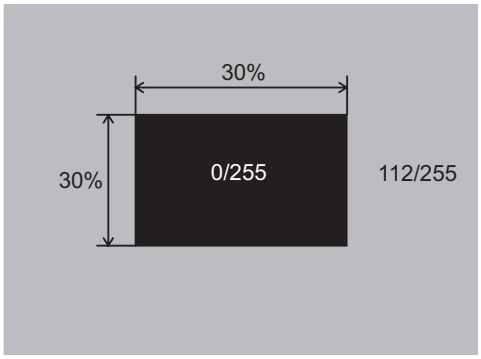
△: means recommended.

4-1-2 Setting of condition before adjustment

1. Before starting adjustment, warm up the projector for about 10 minutes.(Blank white)
2. Set Zoom Wide to Max. And project an image with more than 40 inches in diagonal size.
3. Normalizing the video adjustment.
   (Press the [MENU] button of the Remote control transmitter to display the MAIN menu, and then press the [RESET] button. And select the [DEFAULT]. Next, open MAIN menu and press the [▼] key to display the PICTURE1 menu, then press the [RESET] key to set to [DEFAULT].)
   *note :The MAIN and PICTURE1 menu is not reset with no signal.
4. Set the normal at OPT-WHISPER in the menu.
5. Reset KEYSTONE correction.
6. Perform all adjustments from the Adjustment menu.
   Perform the following operations to display the Adjustment menu.
   a. Press the [MENU] button of the Remote control transmitter (the Setup menu will appear).
   b. Next, press the [RESET] button one time. And press the [RESET] button again for 5 seconds or more (the Adjustment menu will appear).

4-2 Ghost adjustment

Signals for internal adjustment

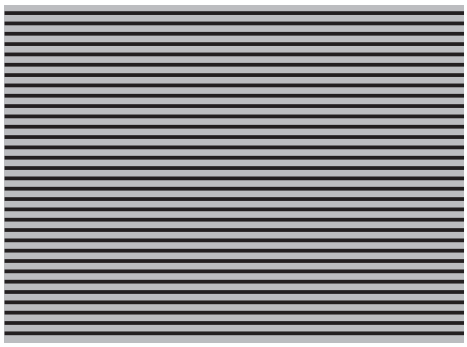


Adjustment procedure

1. Use DAC-P - GHOST - R: in the Adjustment menu to adjust so that R color ghost is at a minimum.
   (Set the adjustment value to default, and then raise the value. When a ghost appears to the left of a vertical line, reduce the value by 2 steps. :CPS317/EDS3170 only)
2. In the same way, use DAC-P - GHOST-G: in the Adjustment menu to adjust so that G color ghost is at a minimum.
3. In the same way, use DAC-P - GHOST-B: in the Adjustment menu to adjust so that B color ghost is at a minimum.

4-3 Flicker adjustment (V.COM adjustment)

Signals for internal adjustment



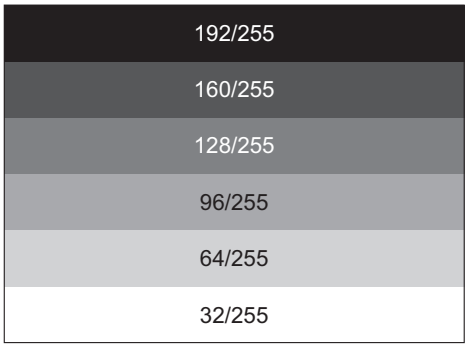
Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-2 Ghost adjustment.
2. Use DAC-P - V.COM - R: in the Adjustment menu to adjust so that the flicker at the center of the screen is less than the flicker at the periphery.
   (When the flicker is about the same across the whole screen, adjust so that the flicker at the center of the screen is somewhat less than elsewhere.)
3. In the same way, use DAC-P - V.COM-G: in the Adjustment menu to adjust the G color flicker.
4. In the same way, use DAC-P - V.COM-B: in the Adjustment menu to adjust the B color flicker.

CPS317/EDS3170/EDS3170A

4-4 PSIG-G adjustment (vertical stripe adjustment)

Signals for internal adjustment

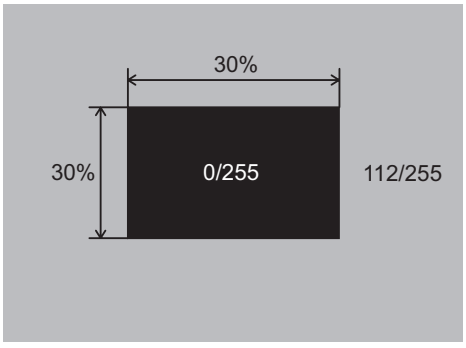


Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-3 Flicker adjustment.
2. Use DAC-P - PSIG - G: in the Adjustment menu to adjust so that the vertical lines spaced every 6 or 12 dots are as inconspicuous as possible.

4-4-1 PSIG-B adjustment (vertical streaks adjustment)

Signals for internal adjustment

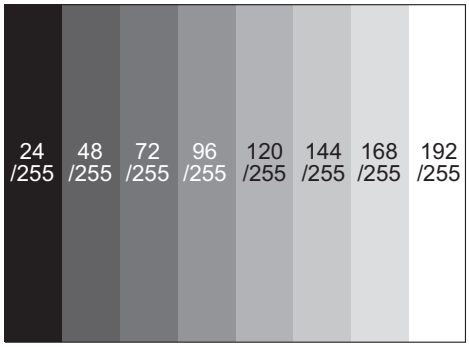


Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-3 Flicker adjustment.
2. Use DAC-P - PSIG - B: in the Adjustment menu to adjust so that the vertical streaks on the upper of window pattern.

4-4 NRSH adjustment (vertical stripe adjustment)

Signals for internal adjustment



Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-3 Flicker adjustment.
2. Use DAC-P - NRSH - R: in the Adjustment menu to adjust so that the vertical lines spaced every 6 dots are as inconspicuous as possible.
   (Reduce the adjustment value when black stripes appear in the 2nd or 3rd tone from the black side. Note that when the adjustment value is lowered, white stripes may appear in the 2nd or 3rd tone from the bright side. Should this happen, adjust so that the stripes are as inconspicuous as possible.)
3. In the same way, use DAC-P - NRSH - G: in the Adjustment menu to adjust vertical stripes of G color.
4. In the same way, use DAC-P - NRSH - B: in the Adjustment menu to adjust vertical stripes of B color.

4-5 White balance adjustment (visual inspection)

Preparations

1. Perform these adjustments after the PSIG adjustment described in Section 4-4.
2. Reset gamma correction before adjustment.
   - Place the cursor on [GAMMA] in the Adjustment menu, press the [RESET] key and select [DEFAULT].

Adjustment procedure

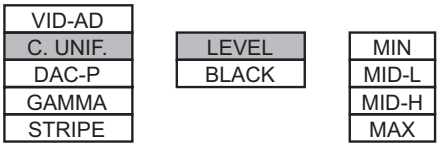
1. First, adjust the G color.
2. Select GAMMA, SUB-CONTRAST, and G: in the Adjust menu. If the background is white solid, press the [MENU SELECT] key on the Remote control transmitter to change to [G] monochrome in the 28-tone grayscale.
3. Adjust GAMMA, SUB-CONTRAST, and G: in the Adjust menu so that brightness of 28 steps is best.
4. Don't adjust GAMMA, SUB-BRIGHT, and G: in the Adjust menu. Because we want to keep the best contrast ratio.
5. Then adjust colors R and B.
6. Select GAMMA, SUB-CONTRAST, and G: in the Adjust menu. If the background is white solid, press the [MENU SELECT] key on the Remote control trasmitter to change to [W] monochrome in the 28-tone grayscale.
7. Adjust GAMMA, SUB-BRIGHT, R: and B: in the Adjust menu so that low-brigtness white balance is best.
8. Adjust GAMMA, SUB-CONTRAST, R: and B: in the Adjust menu so that middle-brightness white balance is best.
9. Repeat steps 7 to 8 above, and adjust so that brightness white balance of 28 steps is best.

4-6 Color uniformity adjustment

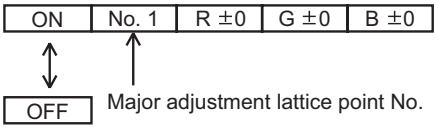
Preparations

1. Perform these adjustments after the white balance adjustment described in Section 4-5.
2. Make a color uniformity adjustment for the following four tones.
   - MIN tone (approx. 4% input signal)
   - MID-L tone (approx. 14% input signal)
   - MID-H tone (approx. 25% input signal)
   - MAX tone (approx. 57% input signal)
3. Place the cursor on the tone to be adjusted in the Adjust menu and press the [▼] key. This displays the Adjust Tone menu at the bottom of the screen. Select the major adjustment lattice point No. and color, and then adjust them.
4. The major adjustment lattice point numbers (a total of 17 points) corresponds to the major adjustment lattice point positions in the diagram on the right. The color uniformity of the entire screen can be adjusted by adjusting the white balance for each of the points starting in order from the low numbers.
5. Adjustment point No.1 should not be adjusted, because it controls the brightness of the entire screen.
6. To temporarily turn correction off, place the cursor on “ON” in the Adjust Tone menu and press the [▼] key. To turn it on again, place the cursor on OFF in the Adjust Tone menu and press the [▲] key.
7. Although this adjustment can also be made using internal signals, we will here use the [MENU SELECT] key on the Remote control transmitter to select the following two signals.
   - Solid monochrome adjustment color (use G color adjustment when a color differential meter is used).
   - Solid white (use for adjustment other than above).
8. Reset color-shading correction before adjustment.
   - When 4 tones and all colors are to be reset, place the cursor on [C.UNIF.] in the Adjustment menu, press the [RESET] key and select [DEFAULT].
   - When only 1 tone is to be reset, place the cursor on the tone to be reset, press the [RESET] key and select [DEFAULT].
   - Single tone and monochrome resets cannot be performed.

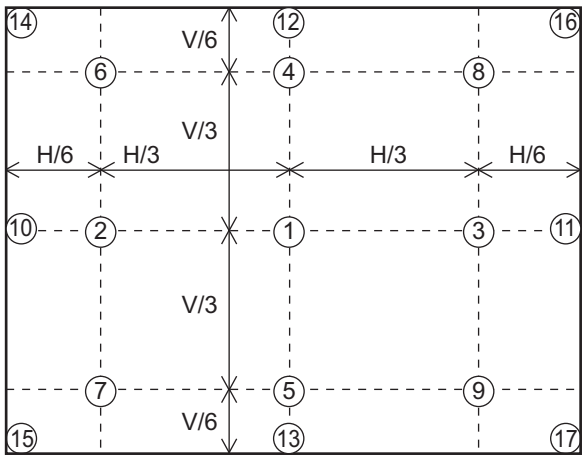
Adjust menu



Adjust Tone menu



Major adjustment lattice point position



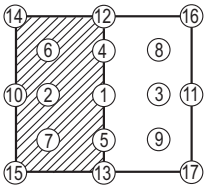
Adjustment procedure 1
(when a color differential meter is used)

1. First adjust [MID-L] tone [G:].
2. Select adjustment point [No.2][G:].
   When the background is not [G] monochrome, press the [MENU SELECT] key on the Remote control transmitter to change to solid [G] monochrome.
3. Measure the illumination at adjustment points No. 2, No.3, No.10 and No.11.
   The values should be:
   No.2 = Y2 [lx] No.10 = Y10 [lx]
   No.3 = Y3 [lx] No.11 = Y11 [lx]
4. No.2 and No.3 adjustment point have the average of Y2 and Y3.
   Y2 = (Y2 + Y3) / 2 ± 2 [%]
   Y3 = (Y2 + Y3) / 2 ± 2 [%]
5. No.10 and No.11 adjustment point have the average of Y10 and Y11.
   Y10 = (Y10 + Y11) / 2 ± 2 [%]
   Y11 = (Y10 + Y11) / 2 ± 2 [%]
6. Then adjust [MID-L] tone [R] and [B].
   When the background is [G] monochrome, press the [MENU SELECT] key on the Remote control transmitter to change to solid white.
7. Measure the color coordinates of adjustment point [No.1] and make a note of them.
   Assume that they are x = x1, y = y1.
   Note: When the CL-100 color and color difference meter is used, the [△](delta) mode is convenient. When adjustment point [No.1] color coordinate has been selected, set the slide switch on the side to [△](delta) while holding down the [F] button on the front panel. The measurement shown after this displays the deviation from measurement point 1.
8. Measure the color coordinates of measurement point [No.2] and adjust [No.2][R:] and [B:] so that the coordinates are as follows.
   x = x1 ± 0.005 , y = y1 ± 0.010
9. Similarly, measure adjustment points [No.3] to [No.17] and adjust their color coordinates starting in order from the small number points.
   This completes adjustments required for [MIN].
   Note: Since excessive correction may lead to a correction data overview during internal calculations, use the following values for reference.
   [No.2] to [No.5] ± 40 or less
   [No.6] to [No.9] ± 50 or less
   [No.10] to [No.13] ± 70 or less
   [No.14] to [No.17] ± 120 or less
10. Then adjust [MIN] tone [G] so that the adjustment data set two times as much as [MID-L] tone [G].
    This completes [G] color adjustments.
11. Then adjust [MIN] tone [R] and [B].
    Select [No.2] [B:] and press the [MENU SELECT] key on the Remote control transmitter to change to solid white.
12. Measure the color coordinates of adjustment point [No.1] and make a note of them.
    Assume that they are x = x1, y = y1.
13. Now measure the color coordinates of measurement point [No.2] and adjust [No.2][R:] and [B:] so that the coordinates are as follows.
    x = x1 ± 0.005 , y = y1 ± 0.010 (Target)
    x = x1 ± 0.020 , y = y1 ± 0.040
14. Similarly, measure adjustment points [No.3] to [No.17] and adjust their color coordinates starting in order from the small number points.
    This completes [MIN] tone adjustments.
15. Now make similar adjustments for [MID-H] tone.
    (Adjust [MID-H] tone [G] so that the adjustment data set half as many as [MID-L] tone [G].)
16. Now make similar adjustments for [MAX] tone.
    (Adjust [MAX] tone [G] so that the adjustment data set half as many as [MID-L] tone [G].)

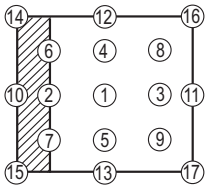
Adjustment procedure 2
(visual inspection)

1. First adjust [MIN] tone [G:].
2. Select [No.2] [G:].
   If the background is [G] monochrome, press the [MENU SELECT] key on the Remote control transmitter to change to solid white.
3. View measurement point [No.2] and [No.3].
   Lower the [G] color intensity only of the color point whose [G] color is more intense than measurement point [No.1].
4. View measurement point [No.10] and [No.11].
   Lower the [G] color intensity only of the color point whose [G] color is more intense than measurement point [No.1], and raise the intensity of the point whose color intensity is lower than measurement point [No.1].
5. Now adjust the [MIN] tone for colors [R] and [B].
6. View measurement points [No.2], [No.3], [No.10] and [No.11]. Adjust the [R] and [B] of each measurement point so that they have the same color as measurement point [No.1].
   Adjustment technique:
   First, adjust [B:] of the point whose color is to be adjusted so that it approximates that of [No.1]. If [R:] is low at this time, the image will have cyan cast, in which case [R:] is increased. On the other hand, if [R:] is excessive, the image will have a magenta cast, in which case [R:] is decreased.
   Overall, a cyan cast makes it easy to see color shading.
7. Next, view measurement points [No.4], [No.5], [No.12], [No.13] and make similar adjustments.
8. Then adjust measurement points [No.6], [No.7], [No.8], [No.9], [No.14], [No.15], [No.16] and [No.17]. This completes the [MIN] tone adjustments.
9. Make similar another three tones as described in steps 1 to 8 above.

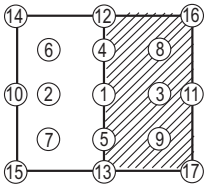
No. 2 deviation range



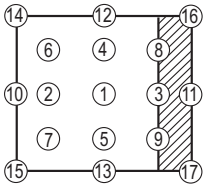
No. 10 deviation range



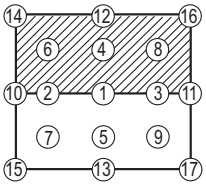
No. 3 deviation range



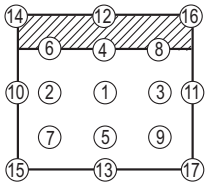
No. 11 deviation range



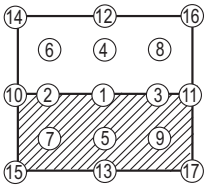
No. 4 deviation range



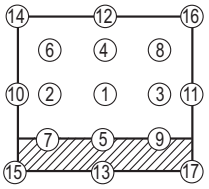
No. 12 deviation range



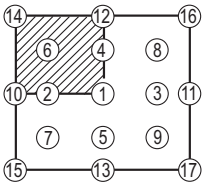
No. 5 deviation range



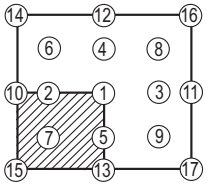
No. 13 deviation range



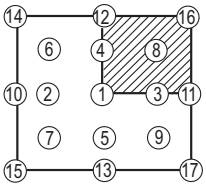
No. 6 deviation range



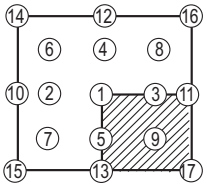
No. 7 deviation range



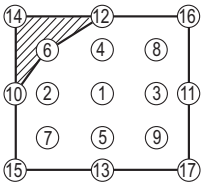
No. 8 deviation range



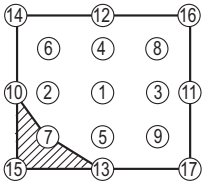
No. 9 deviation range



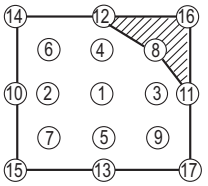
No. 14 deviation range



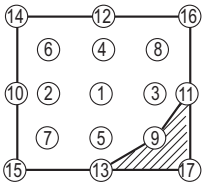
No. 15 deviation range



No. 16 deviation range

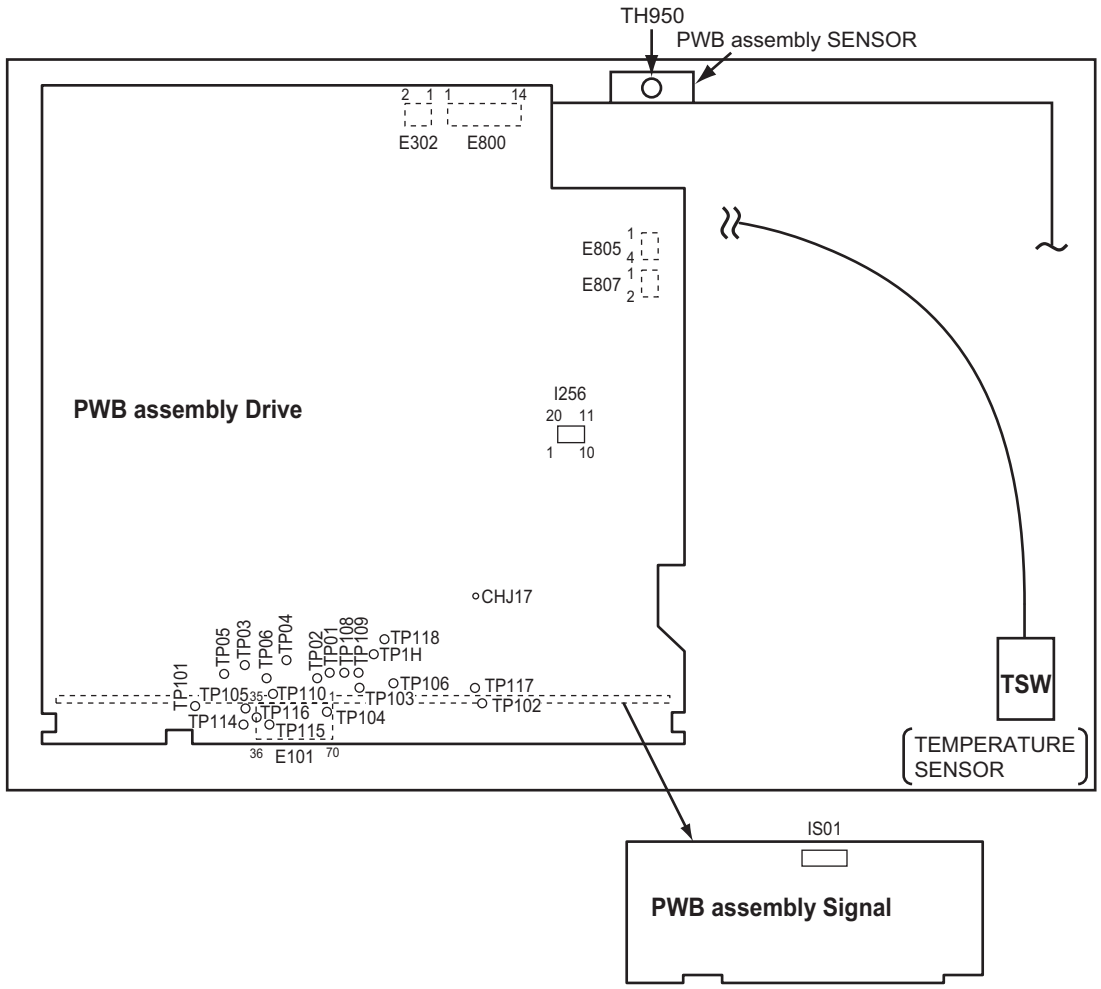


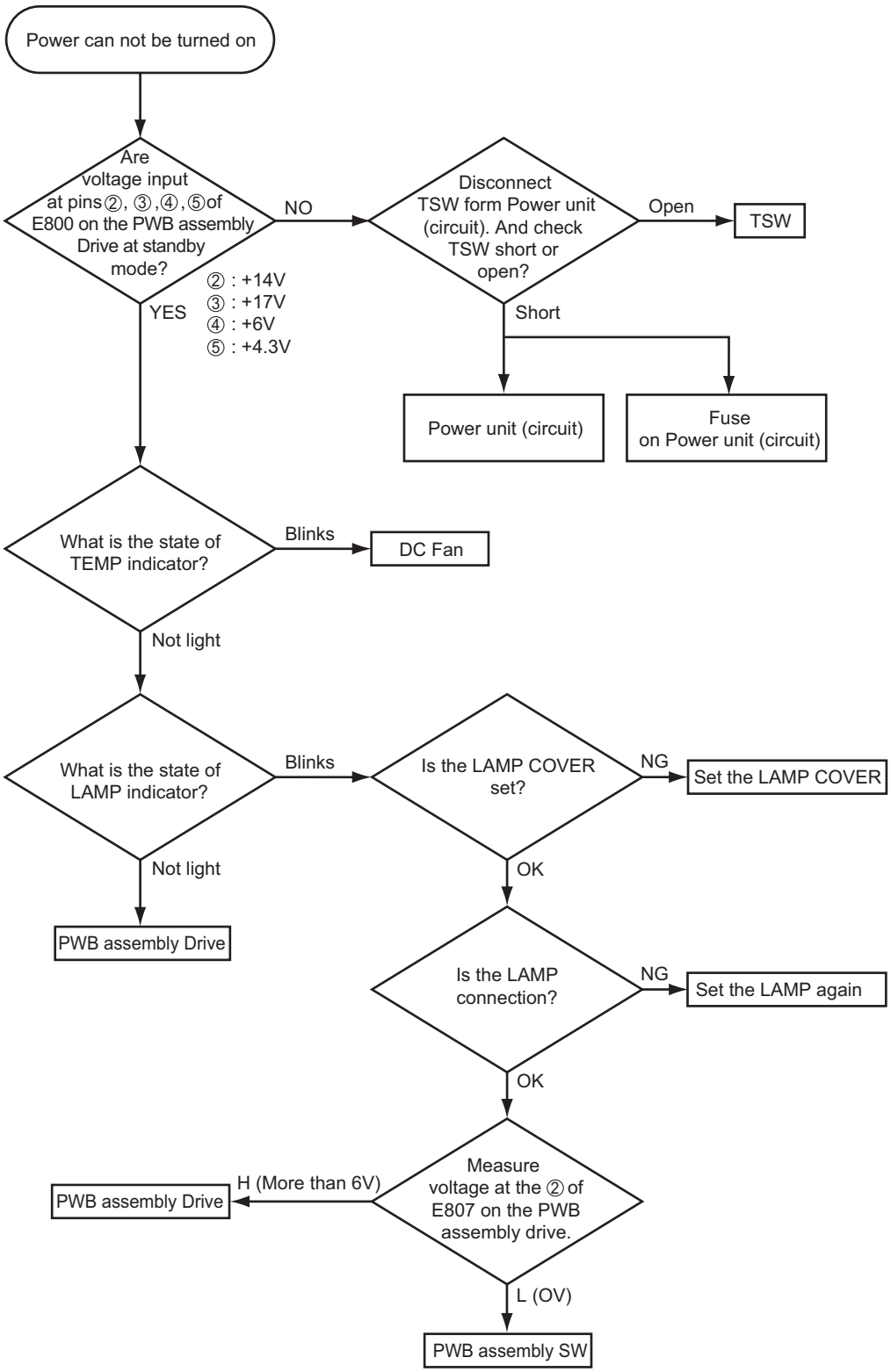
No. 17 deviation range

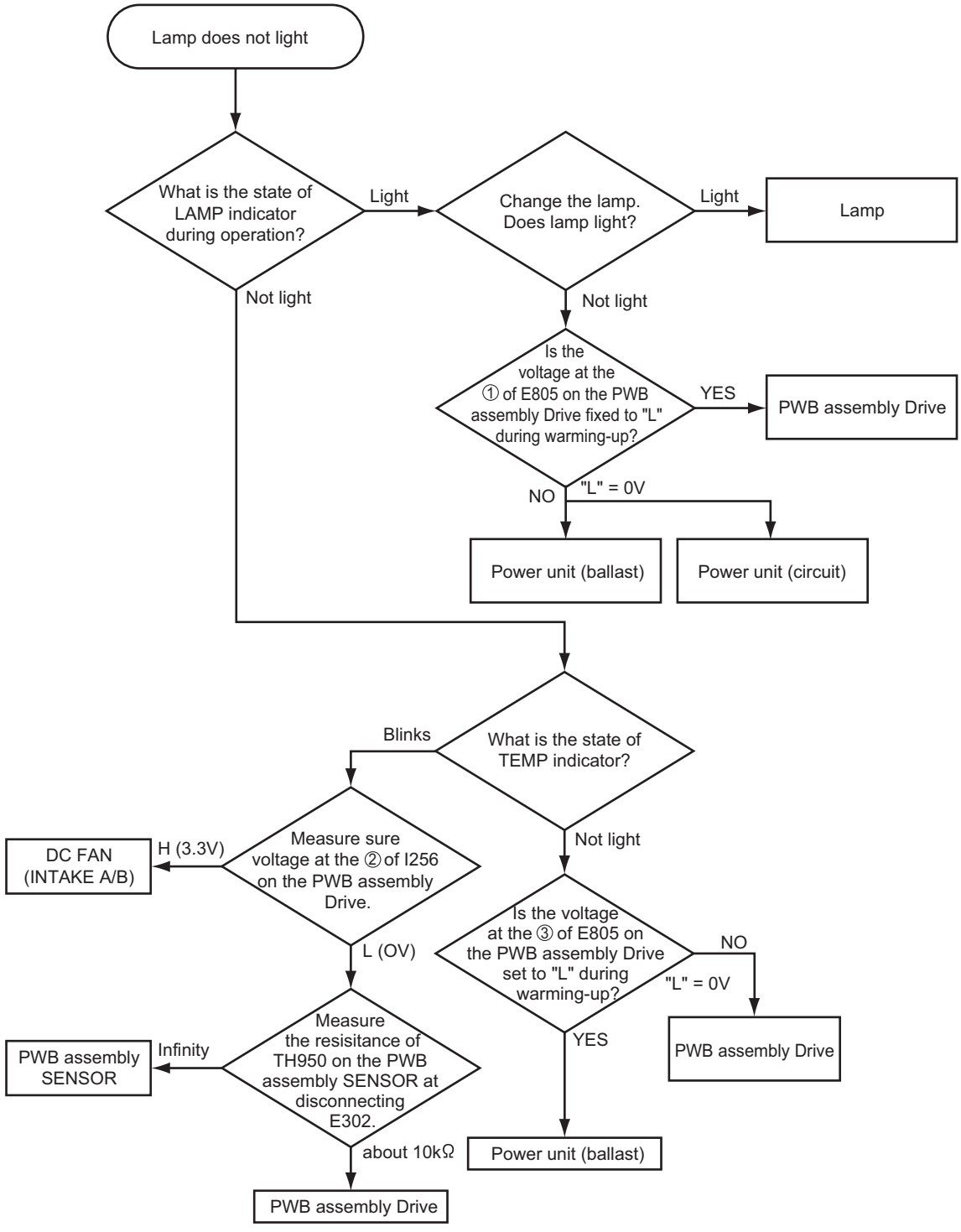


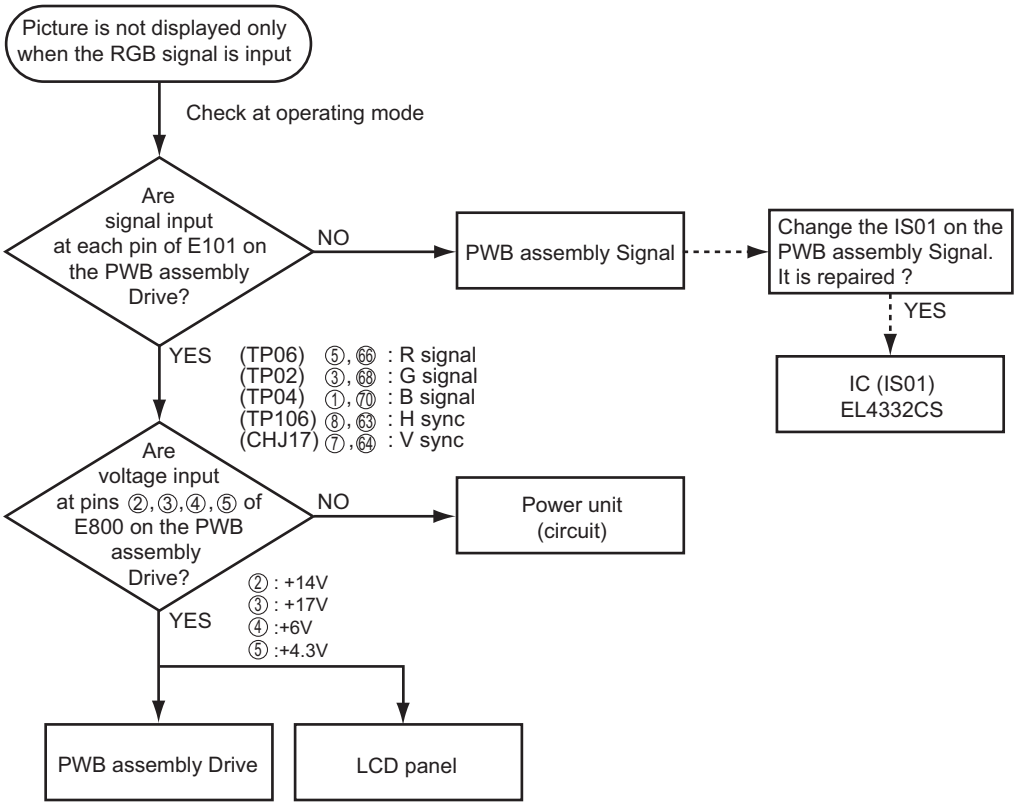
5. Troubleshooting

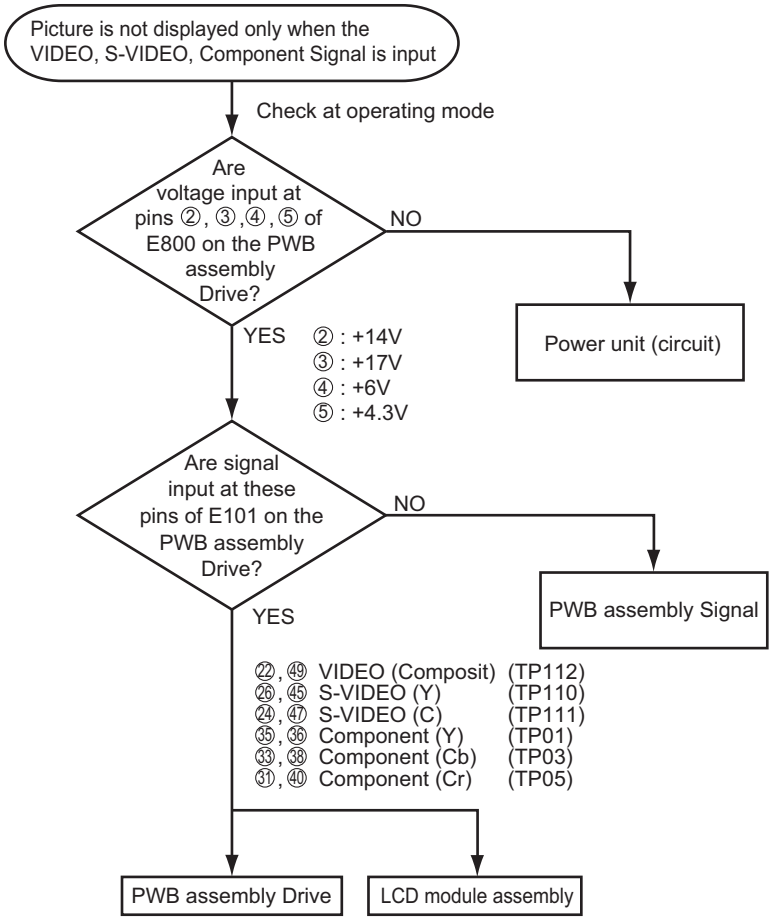
Check points at trouble shooting

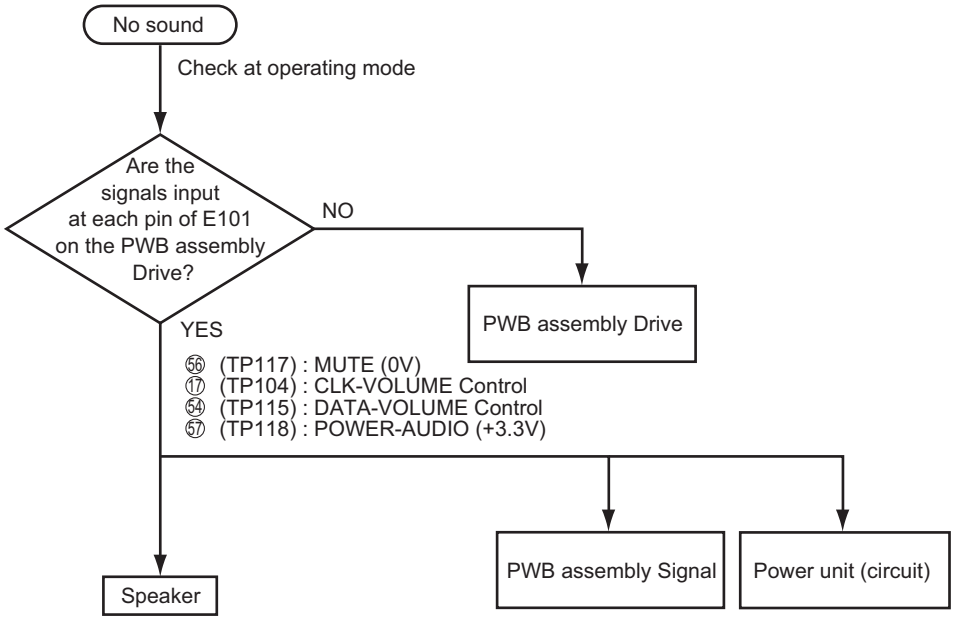


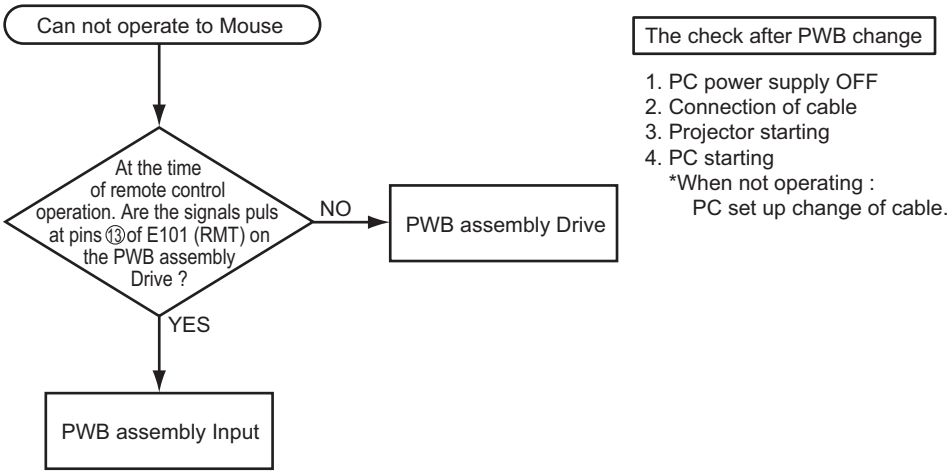

Power can not be turned on
Are voltage input at pins②, ③,④,⑤of E800 on the PWB assembly Drive at standby mode?
NO
Disconnect TSW form Power unit (circuit). And check TSW short or open?
Open
TSW
Short
Power unit (circuit)
Fuse on Power unit (circuit)
② : +14V
③ : +17V
④ : +6V
⑤ : +4.3V
YES
What is the state of TEMP indicator?
Blinks
DC Fan
Not light
What is the state of LAMP indicator?
Blinks
Is the LAMP COVER set?
NG
Set the LAMP COVER
Not light
PWB assembly Drive
OK
Is the LAMP connection?
NG
Set the LAMP again
OK
Measure voltage at the ② of E807 on the PWB assembly drive.
H (More than 6V)
PWB assembly Drive
L (OV)
PWB assembly SW

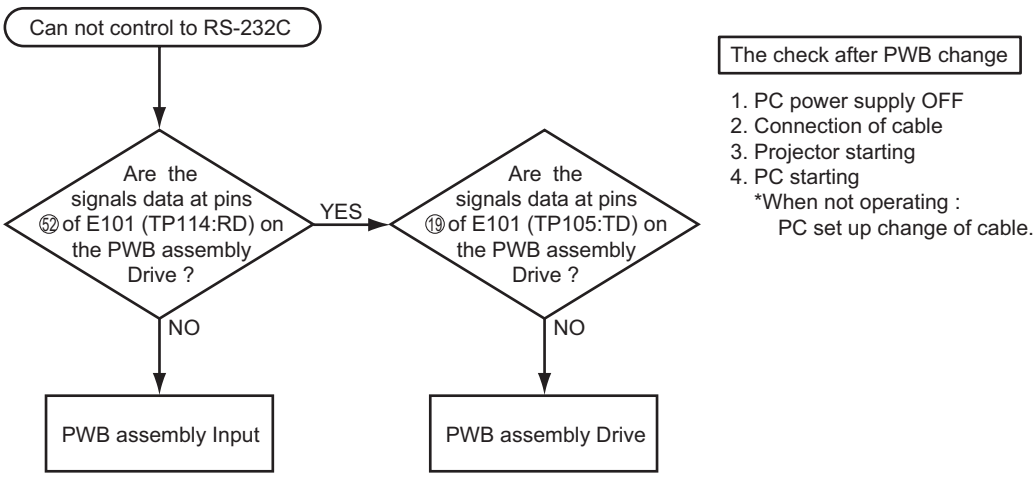

Lamp does not light
What is the state of LAMP indicator during operation?
Light
Change the lamp. Does lamp light?
Light
Lamp
Not light
Not light
Is the voltage at the ① of E805 on the PWB assembly Drive fixed to "L" during warming-up?
YES
PWB assembly Drive
NO
"L" = 0V
Power unit (ballast)
Power unit (circuit)
What is the state of TEMP indicator?
Blinks
Not light
Measure sure voltage at the ② of I256 on the PWB assembly Drive.
H (3.3V)
DC FAN (INTAKE A/B)
L (OV)
Is the voltage at the ③ of E805 on the PWB assembly Drive set to "L" during warming-up?
NO
"L" = 0V
PWB assembly Drive
YES
Power unit (ballast)
Measure the resisitance of TH950 on the PWB assembly SENSOR at disconnecting E302.
Infinity
PWB assembly SENSOR
about 10kΩ
PWB assembly Drive


Picture is not displayed only when the RGB signal is input
Check at operating mode
Are signal input at each pin of E101 on the PWB assembly Drive?
NO
PWB assembly Signal
Change the IS01 on the PWB assembly Signal. It is repaired ?
YES
IC (IS01) EL4332CS
YES
(TP06) ⑤, ㊻ : R signal
(TP02) ③, ㊽ : G signal
(TP04) ①, ㊿ : B signal
(TP106) ⑧, ㊸ : H sync
(CHJ17) ⑦, ㊹ : V sync
Are voltage input at pins ②,③,④,⑤ of E800 on the PWB assembly Drive?
NO
Power unit (circuit)
② : +14V
③ : +17V
④ :+6V
⑤ :+4.3V
YES
PWB assembly Drive
LCD panel


Picture is not displayed only when the VIDEO, S-VIDEO, Component Signal is input
Check at operating mode
Are voltage input at pins ②, ③,④, ⑤ of E800 on the PWB assembly Drive?
NO
Power unit (circuit)
YES
② : +14V
③ : +17V
④ : +6V
⑤ : +4.3V
Are signal input at these pins of E101 on the PWB assembly Drive?
NO
PWB assembly Signal
YES
㉒, ㊾ VIDEO (Composit) (TP112)
㉖, ㊺ S-VIDEO (Y) (TP110)
㉔, ㊼ S-VIDEO (C) (TP111)
㉟, ㊱ Component (Y) (TP01)
㉝, ㊳ Component (Cb) (TP03)
㉛, ㊵ Component (Cr) (TP05)
PWB assembly Drive
LCD module assembly


No sound
Check at operating mode
Are the signals input at each pin of E101 on the PWB assembly Drive?
NO
PWB assembly Drive
YES
㊺ (TP117) : MUTE (0V)
⑰ (TP104) : CLK-VOLUME Control
㊹ (TP115) : DATA-VOLUME Control
㊼ (TP118) : POWER-AUDIO (+3.3V)
Speaker
PWB assembly Signal
Power unit (circuit)


Can not operate to Mouse
At the time of remote control operation. Are the signals puls at pins ⑬of E101 (RMT) on the PWB assembly Drive ?
NO
PWB assembly Drive
YES
PWB assembly Input
The check after PWB change
1. PC power supply OFF
2. Connection of cable
3. Projector starting
4. PC starting
*When not operating :
PC set up change of cable.


Can not control to RS-232C
Are the signals data at pins ㊷ of E101 (TP114:RD) on the PWB assembly Drive ?
YES
Are the signals data at pins ⑲ of E101 (TP105:TD) on the PWB assembly Drive ?
NO
NO
PWB assembly Input
PWB assembly Drive
The check after PWB change
1. PC power supply OFF
2. Connection of cable
3. Projector starting
4. PC starting
*When not operating :
PC set up change of cable.

6. Service points

● Lead free solder [CAUTION]

This product uses lead free solder (unleaded) to help preserve the environment. Please read these instructions before attempting any soldering work.

Caution: Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead free solder can splatter at high temperatures (600˚C).

■ Lead free solder indicator

Printed circuit boards using lead free solder are engraved with an "F."

■ Properties of lead free solder

The melting point of lead free solder is 40-50˚C higher than leaded solder.

■ Servicing solder

Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended.
Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

Precautions when using leaded solder

- Remove all lead free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead free solder has been completely melted (do not apply the soldering iron without solder).

■ Servicing soldering iron

A soldering iron with a temperature setting capability (temperature control function) is recommended.
The melting point of lead free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

Recommended soldering iron:

- Soldering iron with temperature control function (temperature range: 320-450˚C)

Recommended temperature range per part:

Part	Soldering iron temperature
Mounting (chips) on mounted PCB	320˚C±30˚C
Mounting (chips) on empty PCB	380˚C±30˚C
Chassis, metallic shield, etc.	420˚C±30˚C

The PWB assembly which has used lead free solder

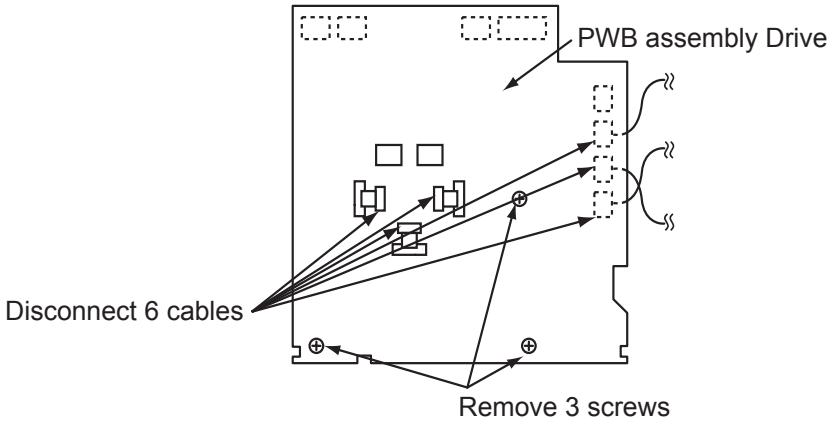
① PWB assembly DRIVE
② PWB assembly INPUT
③ PWB assembly SENSOR
④ PWB assembly SWITCH
⑤ PWB assembly REMOTE

6. Service points

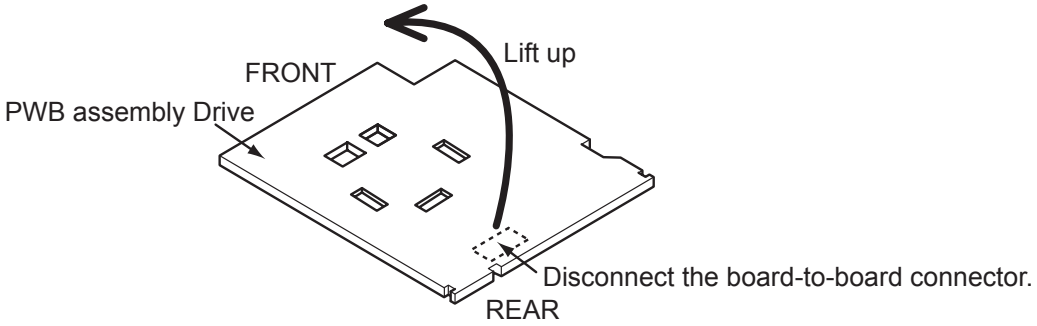
● Cautions when removing the PWB assembly Drive

When removing the PWB assembly Drive, there is danger of damaging the connector connecting cables and the PWB assembly Signal.

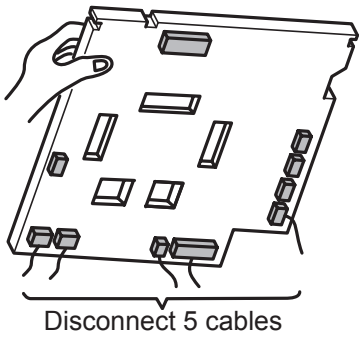
1) Disconnect 6 cables and remove 3 screws.



2) Lift up the rearward of the PWB assembly Drive to the front.

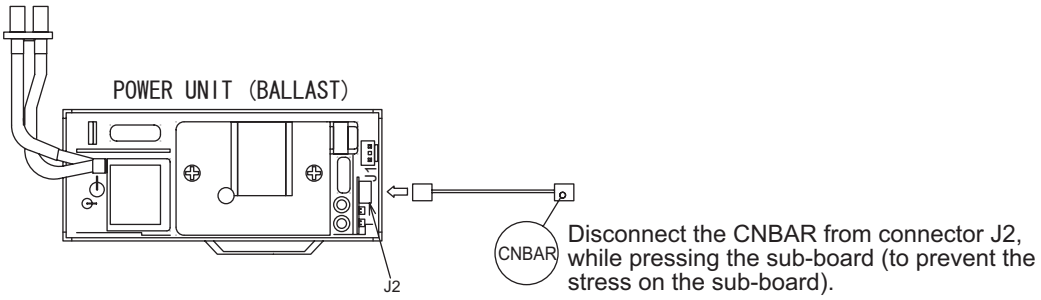


3) Disconnect 5 cables lifting the PWB assembly Drive.



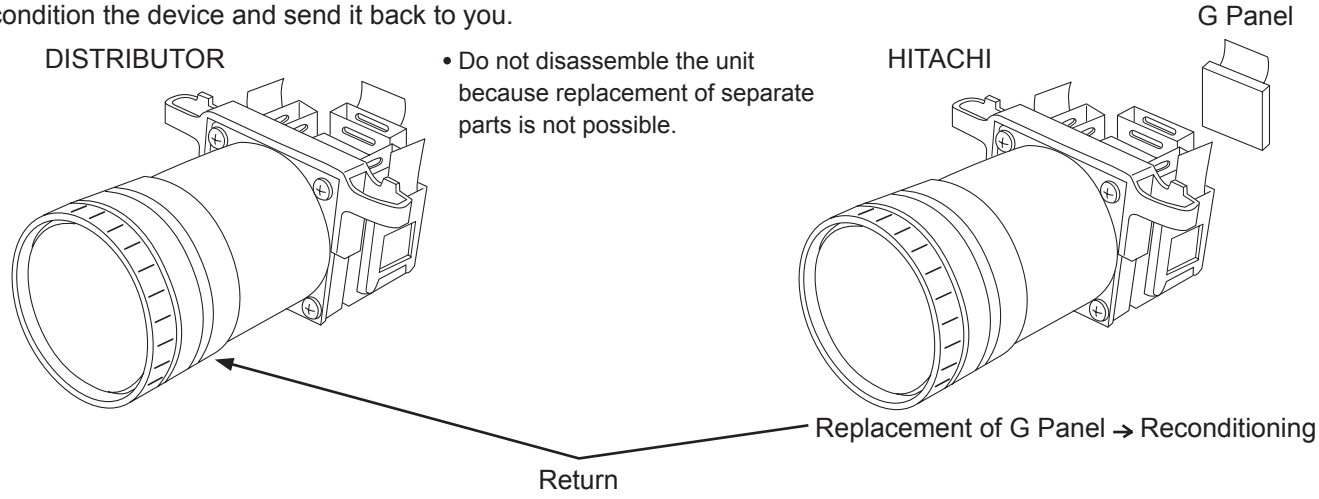
● Cautions when removing the POWER UNIT (BALLAST)

When removing the cable (CNBAR) connected to POWER UNIT (BALLAST) there is danger of damaging the small PWB connecting cables.


POWER UNIT (BALLAST)
J2
CNBAR
Disconnect the CNBAR from connector J2, while pressing the sub-board (to prevent the stress on the sub-board).

● Before Replacing the LCD / Lens Prism

You should not replace separately the parts of the liquid crystal LCD / Lens Prism because it works properly only when used together. Therefore, regarding these parts, you can either replace part , LCD / Lens Prism assembly, or send the whole unit LCD / Lens Prism assembly back to Hitachi, where we will replace the malfunctioning part, recondition the device and send it back to you.


G Panel
DISTRIBUTOR
• Do not disassemble the unit because replacement of separate parts is not possible.
HITACHI
Replacement of G Panel → Reconditioning
Return

● Using the Rremote control

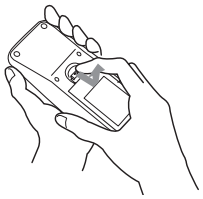
⚠ **CAUTION** Precautions to observe in regards to the batteries

Always handle the batteries with care and use them only as directed. Improper use may result in battery cracking or leakage, which could result in fire, injury and/or pollution of the surrounding environment.

- Keep the battery away from children and pets.
- Be sure to use only the batteries specified for use with the remote control. Do not mix new batteries with used ones.
- When inserting batteries, verify that the plus and minus terminals are aligned correctly (as indicated in the remote control).
- When you dispose the battery, you should obey the law in the relative area or country.

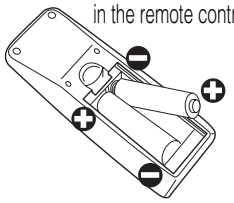
1 Remove the battery cover

Slide back and remove the battery cover in the direction of the arrow.



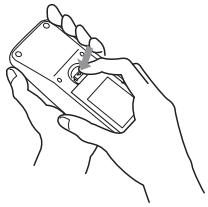
2 Insert the batteries

Align and insert the two AA batteries (that came with the projector) according to their plus and minus terminals (as indicated in the remote control).



3 Close the battery cover

Replace the battery cover in the direction of the arrow and snap it back into place.

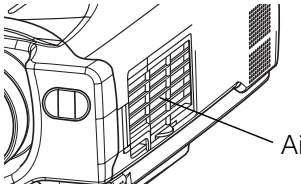


● Caring for the air filter

The air filter should be cleaned about every 100 hours. If the LAMP indicator and TEMP indicator blink red simultaneously, or a message prompts you to clean the air filter when you turn on the unit, the filter needs to be cleaned. (See "Related Messages" and "Regarding the Indicator Lamps" for details.)

1 **Turn off the projector, and unplug the power cord**

2 **Apply a vacuum cleaner to the top of the air filter cover to clean the air filter**



3 **Turn on the projector, and use the menu to reset the filter timer**

- To reset the air filter timer, from the OPTION menu, select FILTER TIME. (Select RESET on the menu with the ▲ button.)

● Lamp (Option Lamp: DT00511(CPS317/EDS3170/EDS3170A) / DT00521(CPX327/EDX3270/EDX3270A)

HIGH VOLTAGE
HIGH TEMPERATURE
HIGH PRESSURE

Before replacing the lamp, check the serial number of the replacement lamp bulb (sold separately: DT00511 for CPS317/EDS3170/EDS3170A or DT00521 for CPX327/EDX3270/EDX3270A), then contact your local dealer. Before replacing the lamp, turn off the power, and unplug the power cord, then wait at least 45 minutes, in order to ensure that the lamp is properly cooled. Removing the lamp bulb while it is still hot could cause burns, or cause the lamp bulb to burst.

⚠**WARNING** The LCD projector uses a glass lamp bulb. It is a mercury lamp with high internal pressure. High-pressure mercury lamps can break with a loud bang, or burn out, if jolted or scratched, or through wear over time. Each lamp has a different lifetime, and some may burst or burn out soon after you start using them. In addition, when the bulb bursts, it is possible for shards of glass to fly into the lamp housing, and for gas containing mercury to escape from the projector's vent holes.

- Handle with care: jolting or scratching could cause the lamp bulb to burst during use.
- If the replace lamp indicator (see "Related Messages" and "Regarding the indicator Lamps") comes on, replace the lamp as soon as possible. Using the lamp for long periods of time, or past the replacement date, could cause it to burst. Do not use old (used) lamps; this is a cause of breakage.
- If the lamp breaks soon after the first time it is used, it is possible that there are electrical problems elsewhere besides the lamp. If this happens, contact your local dealer.
- If the lamp should break (it will make a loud bang when it does), ventilate the room well, and make sure not to breathe the gas that comes out of the projector vents, or get it in your eyes or mouth.
- If the lamp should break (it will make a loud bang when it does), unplug the power cord from the outlet, and make sure to request a replacement lamp from your local dealer. Note that shards of glass could damage the projector's internals, or cause injury during handling, so please do not try to clean the projector or replace the lamp yourself.
- Obey local ordinances when disposing of used lamps. In most cases, it is possible to dispose of used bulbs in the same manner as used glass bottles, but in some cases, bulbs are sorted separately.
- Do not use the projector with the lamp cover removed.

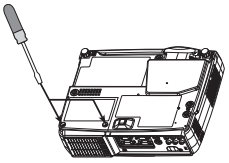
● Replacing the Lamp

All projector lamps will wear out eventually. If used for long periods of time, the image could become darkened, and the color contrast could be impacted as well. We recommend that you replace your lamps early. If the LAMP indicator turns red, or a message prompts you to replace the lamp when you power up the projector, the lamp needs to be replaced. (See "Related Messages" and "Regarding the Indicator Lamps" for details.)

1 **Turn off the projector, and unplug the power cord. Allow the lamp bulb to cool for at least 45 minutes, and prepare a new lamp (sold separately: DT00511 for CPS317/EPS3170/EPS3170A or / DT00521 for CPX327/EDX3270/EDX3270A)**

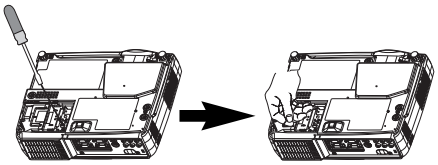
2 **After making sure that the projector has cooled adequately, slowly flip over the projector, so that the bottom is facing up**

3 **Unscrew the 2 screws, and remove the lamp cover**



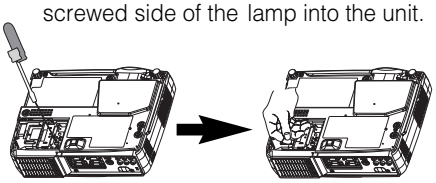
4 **Unscrew the 1 screw, and slowly pull out the lamp by the handle**

- Be careful not to touch the inside of the lamp case.

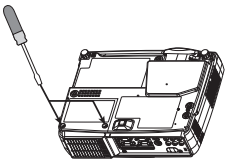


5 **Insert the new lamp, and tighten the 1 screw firmly to lock it in place**

- Also steadily push the opposite side of the screwed side of the lamp into the unit.



6 **Replace the lamp cover, and tighten the 2 screws firmly to lock it in place**



7 **Slowly turn the projector so that the top is facing up**

8 **Turn on the projector power, and using the menu, reset the lamp timer**

- To reset the lamp timer, from the OPTION menu, select LAMP TIME.

ATTENTION • Make sure that the screws are screwed in firmly. Loose screws could result in damage or injury.

- Do not use with lamp cover removed.
- Do not reset the lamp timer without replacing the lamp. Reset the lamp timer always when replacing the lamp. The message functions will not operate properly if the lamp timer is not reset correctly.
- When the lamp has been replaced after the message of "CHANGE THE LAMP ...THE POWER WILL TURN OFF AFTER 0 hr." is displayed, or the LAMP indicator is red, complete the following operation within 10 minutes of switching power ON.

NOTE • The LAMP indicator is also red when the lamp unit reaches high temperature. Before replacing the lamp, switch power OFF, wait approximately 20 minutes, and switch power ON again. If the LAMP indicator is still red, replace the lamp.

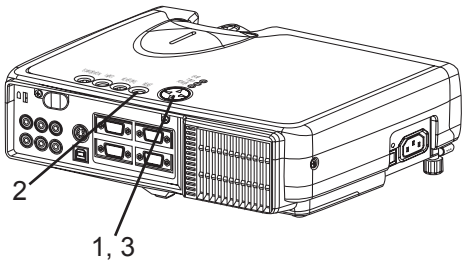
● Resetting the Lamp Timer

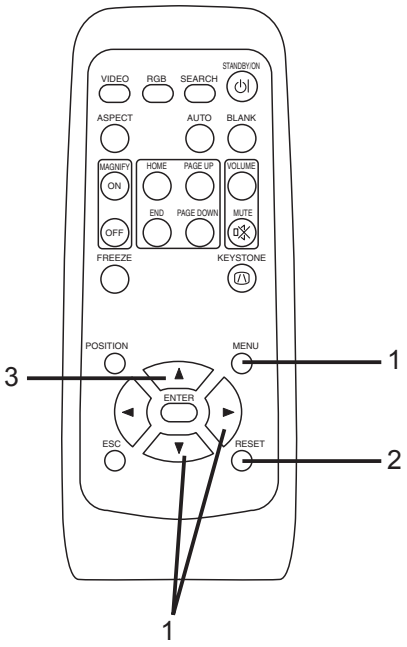
Reset the lamp timer after replacing the lamp. When the lamp has been replaced after the LAMP indicator is red, or the CHANGE THE LAMP message is displayed, complete the following operation within ten minutes of switching power ON. The power will be turned off automatically in over 10 minutes.

1. Switch power ON, and select the LAMP TIME on the OPTION menu.
2. Depress the RESET button for at least 3 seconds while lamp time is being displayed.
   The reset menu will then appear.
3. Select RESET on the menu with the ▲ button, and wait until the timer display is cleared.

NOTE:

Do not reset the lamp timer without replacing the lamp. Reset the lamp timer always when replacing the lamp. The message functions will not operate properly if the lamp timer is not reset correctly.





● Notice of AUTO adjustment

Use of AUTO adjustment with the image through RGB input optimizes VPOSI, HPOSI, HSIZE and HPHASE automatically.

In case that projected image has dark tone around its peripheral, AUTO operation sometimes makes artifacts in the image, shifts capture area and so on. Those failures are caused by period of image data is not exactly distinguished to period of blanking on signal processing.

To avoid such phenomena, AUTO function should be used with the full size picture that has bright tone on its peripheral.

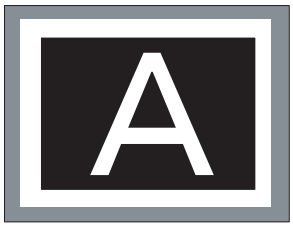


Image when AUTO operates correctly

Image when AUTO fails.

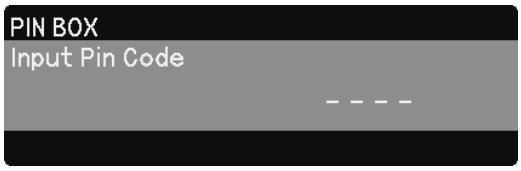
- Noting image of top or bottom lines.
- Shift of the image to East or West.
- Artifacts on image. Etc.

Note

1) The phenomenon at the failure of AUTO adjustment depends on resolution of input source, scene of picture etc.
2) There is no failure above in AUTO with video source through VIDEO, S-VIDEO or COMPONENT input. The reason is why recognition of input signal's standard does not need to search the capture range from input signal itself.

● PIN LOCK System

If the following PIN BOX menu appears after power on the projector, the PIN LOCK system has been activated. Under such a condition, key operations and signal displaying are inhibited. To open the PIN LOCK system, we need to input the correct 4 digits PIN CODE. If correct PIN CODE is not input in 5 min., the lamp will be automatically turned off.



PIN BOX

Returning repaired unit

Use the Master PIN code. See the paragraph of Releasing the PIN LOCK system inactivation.

Swap unit/Returned unit

Inactivate the PIN LOCK system. See the paragraph of the PIN LOCK system inactivation.

Releasing the PIN LOCK System

When the PIN BOX menu is displayed, sequentially enter the codes with remote controller as follows. In accordance with remote controller button entry, "∗" mark appears in the PIN BOX menu.

Master PIN codes

1st entry code: Press the "MENU" button.
2nd entry code: Press the "▼" button.
3rd entry code: Press the "KEYSTONE" button.
4th entry code: Press the "▲" button.

Note: The Master PIN codes can be used up to 30 times. The codes cannot be used thereafter. If the Master PIN codes cannot be used, see the paragraph of the PIN LOCK system inactivation.

The PIN LOCK System inactivation

1. When the PIN BOX menu is displayed, press "RESET" for 3 seconds or more in order to get the ID Inquiring Code.

PIN BOX (ID Inquiring Code)

2. Send HITACHI sales company the Inquiring code (10 digits) to inquire the correct PIN code.
3. With the PIN BOX menu displayed, input the correct PIN code. Enter the correct PIN CODE that HITACHI sales company informed.
4. Open menu and select "TURN OFF" from the PIN LOCK items in the OPTION menu. Then the PIN BOX menu appears.
5. Input the correct PIN code in the PIN BOX menu.
6. And then, the OPTION menu appears.

After the PIN LOCK system is inactivated, the PIN BOX is no longer displayed in the OPTION menu.
If the PIN LOCK items are kept displaying, the PIN LOCK system is not inactivated yet. Input the correct PIN CODE again.

● Related Messages

When the unit's power is ON, messages such as those shown below may be displayed. When any such message is displayed on the screen, please respond as described below.

Message	Description
CHANGE THE LAMP **AFTER REPLACING LAMP, RESET THE LAMP TIMER.** (Note 1)	Lamp usage time is approaching 2,000 hours. (Note 2) Preparation of a new lamp, and an early lamp change, is recommended. After you have changed the lamp, please be sure to reset the lamp timer.
CHANGE THE LAMP **AFTER REPLACING LAMP, RESET THE LAMP TIMER.** **THE POWER WILL TURN OFF AFTER ＊＊ hr.** (Note 1)	Lamp usage time is approaching 2,000 hours. A lamp change within ＊＊ hours is recommended. (Note 2) When lamp usage reaches 2,000 hours, the power will automatically be turned OFF. Please change the lamp by referring to “THE LAMP” in Vol.1 (Basic). After you have changed the lamp, please be sure to reset the lamp timer.
CHANGE THE LAMP **AFTER REPLACING LAMP, RESET THE LAMP TIMER.** **THE POWER WILL TURN OFF AFTER 0 hr.**	As lamp use has reached 2,000 hours, the power will soon be automatically turned OFF. (Note 2) Please immediately turn the power OFF, and follow the instructions in the “THE LAMP” section of the separate booklet, Vol.1 (Basic). After you have changed the lamp, please be sure to reset the lamp timer.
CLEAN THE AIR FILTER **AFTER CLEANING AIR FILTER, RESET THE FILTER TIMER.**	A note of precaution when cleaning the air filter. After cleaning the filter, operate FILTER TIME of the OPTION Menu, and perform reset of the filter timer.
NO INPUT IS DETECTED **ON ＊＊＊**	There is no input signal. Please confirm the signal input connection, and the status of the signal source.
SYNC IS OUT OF RANGE **ON ＊＊＊ fH ＊＊＊＊＊kHz fV ＊＊＊＊＊Hz**	The horizontal or vertical wavelength of the inputted signal is outside of the response parameters of this unit. Please confirm the specs for this unit or the signal source specs.
CHECK THE AIR FLOW	The internal portion temperature is rising. Please turn the power OFF, and allow the unit to cool down for approximately 20 minutes. After having confirmed the following items, then please resent the power to ON. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 35°C?

NOTES

Note 1: Although this message will be automatically disappeared after around 3 minutes, it will be reappeared every time the power is turned ON.

Note 2: Lamps have a finite product life. Lamps are characterized by the fact that, after long hours of usage, a lamp will no longer light up, or the lamp will break or burst, etc. This unit is equipped with an automatic shut-down function, such that the power will automatically be turned OFF when lamp usage time has reached 2,000 hours. Please be aware, however, that among lamp types, there are major differences in product lifetimes; a lamp may thus fail to light even prior to the functioning of the automatic shut-down function of this unit.

● Regarding the Indicator Lamps

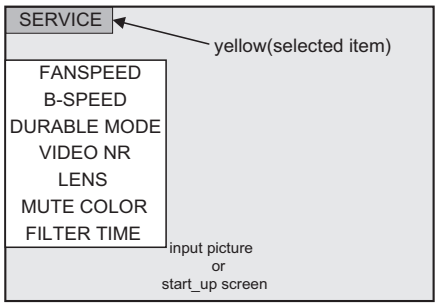
Lighting and flashing of the POWER indicator, the LAMP indicator, and the TEMP indicator have the meanings as described in the Table below.
Please respond in accordance with the instructions within the Table.

POWER indicator	LAMP indicator	TEMP indicator	Description
The orange lamp is lighted	Turned OFF (Not lighted)	Turned OFF (Not lighted)	The STANDBY mode is set
Flashing of the green lamp	Turned OFF	Turned OFF	The unit is warming up. Please wait.
The green lamp is lighted	Turned OFF	Turned OFF	The unit is in an ON state. Ordinary operations may be performed.
Flashing of the orange lamp	Turned OFF	Turned OFF	The unit is cooling down. Please wait.
Blink of the red lamp	-	-	The unit is cooling down. Please wait. A certain error has been detected. Wait until the POWER indicator lamp has finished flashing, and then perform the proper response measure using the item descriptions below as reference.
The red lamp is lighted, or blink	The red lamp is lighted	Turned OFF	The lamp does not light. There is a possibility that the interior portion has become heated. Turn the power OFF and wait approximately 20 minutes. After the main unit has cooled down, please confirm whether or not there is blockage of the air passage aperture, whether or not the filter is dirty, and/or whether or not the peripheral temperature exceeds 35°C, etc. After performing any needed maintenance, turn the power ON again; if the same display is displayed, then please change the lamp.
The red lamp is lighted, or blink	Blink of the red lamp	Turned OFF	Either there is no lamp and/or lamp cover, or either of these has not been properly fixed (attached). Turn the power OFF and wait approximately 45 minutes. After the main unit has sufficiently cooled down, please make confirmation of the attachment state of the lamp and lamp cover. After performing any needed maintenance, turn the power ON again.
The red lamp is lighted, or blink	Turned OFF	Blink of the red lamp	The cooling fan is not operating. Turn the power OFF and wait approximately 20 minutes. After the main unit has cooled down, please make confirmation that no foreign matter has become caught in the fan, etc. After performing any needed maintenance, turn the power ON again.
The red lamp is lighted, or blink	Turned OFF	The red lamp is lighted	There is a possibility that the interior portion has become heated. Turn the power OFF and wait approximately 20 minutes. After the main unit has cooled down, please confirm whether or not there is blockage of the air passage aperture, whether or not the filter is dirty, and/or whether or not the peripheral temperature exceeds 35°C, etc. After performing any needed maintenance, turn the power ON again.
The green lamp is lighted	Alternative blink with the red lamp		There is a possibility that the interior portion has become overcooled. Please use the unit within the usage temperature parameters (0°C to 35°C). Check the connector CNTH connecting. After performing any needed maintenance, turn the power ON again.
The green lamp is lighted	Simultaneous blink with the red lamp		This is a notification that it is time to clean the filter. After cleaning the filter, operate the FILTER TIME portion of the OPTION Menu, and perform reset of the FILTER TIME.

NOTE

When the interior portion has become overheated, for safety purposes, the power source is automatically turned OFF, and the indicator lamps may also be turned OFF. Press the "◯" (power OFF) side of the main power switch, and wait for approximately 20 minutes. Please then use the unit only after having first confirmed that the unit has sufficiently cooled down.

SERVICE MENU



To display the OSD for “SERVICE MENU” set up.

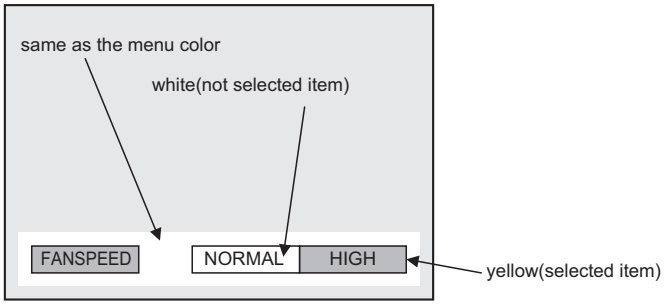
By the control panel	By the remote control transmitter
1. Display the menu by the “MENU” button. 2. Select the “OPT.” on the menu. 3. Continue press the button “◀” first, then press the button “◀” together with “RESET”, and hold for 3 seconds.	1. Display the menu by the “MENU” button. 2. Select the “OPT.” on the menu. 3. Continue pressing the button “MAGNIFY OFF” for 3 seconds.

● Setup of a Cooling Fan Speed

When using this projector in the place where altitude is high, we recommend you to set a cooling fan’s speed as “HIGH”. It is because the cooling efficiency of a projector falls and the temperature inside a projector rises easily in such a place, since the density of air becomes low.

Setting Method of Cooling Fan Speed

1. Select the “FAN SPEED” on the OSD using button “▼” by the SERVICE MENU.



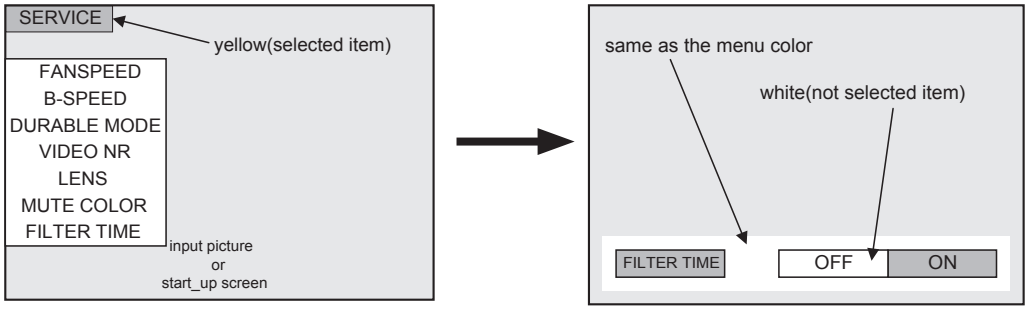
2. Select the “HIGH” on the OSD using the button “▶”. To reset this setup, select the “NORMAL” using the button “◀”.
3. The OSD will be ended by no operation for 10 seconds or change of input signal. To end immediately, use one of buttons except buttons “▲”, “▼”, “◀”, “▶”.

NOTE:

- The “HIGH” mode makes the fan noisy than “NORMAL” mode.
- The recall of factory setting sets the fan speed to “NORMAL” mode. You must set the fan speed after recall of factory setting if you need “HIGH” mode.

● Setup of Filter time (“ON” or “OFF”)

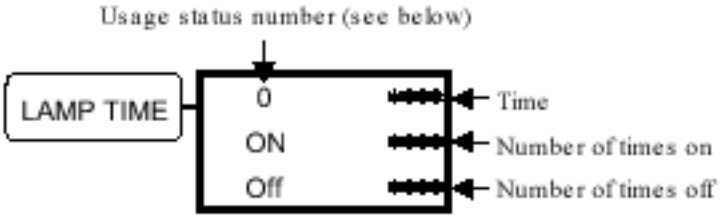
1. Select the “FILTER TIME” on the OSD using button “▼” by the SERVICE MENU.



2. ON : Select the “ON” on the OSD using button “▶”.
   OFF : Select the “OFF” on the OSD using button “◀”.
3. The OSD will be ended by no operation for 10 seconds or change of input signal. To end immediately, use one of buttons except buttons “▲”, “▼”, “◀”, “▶”.

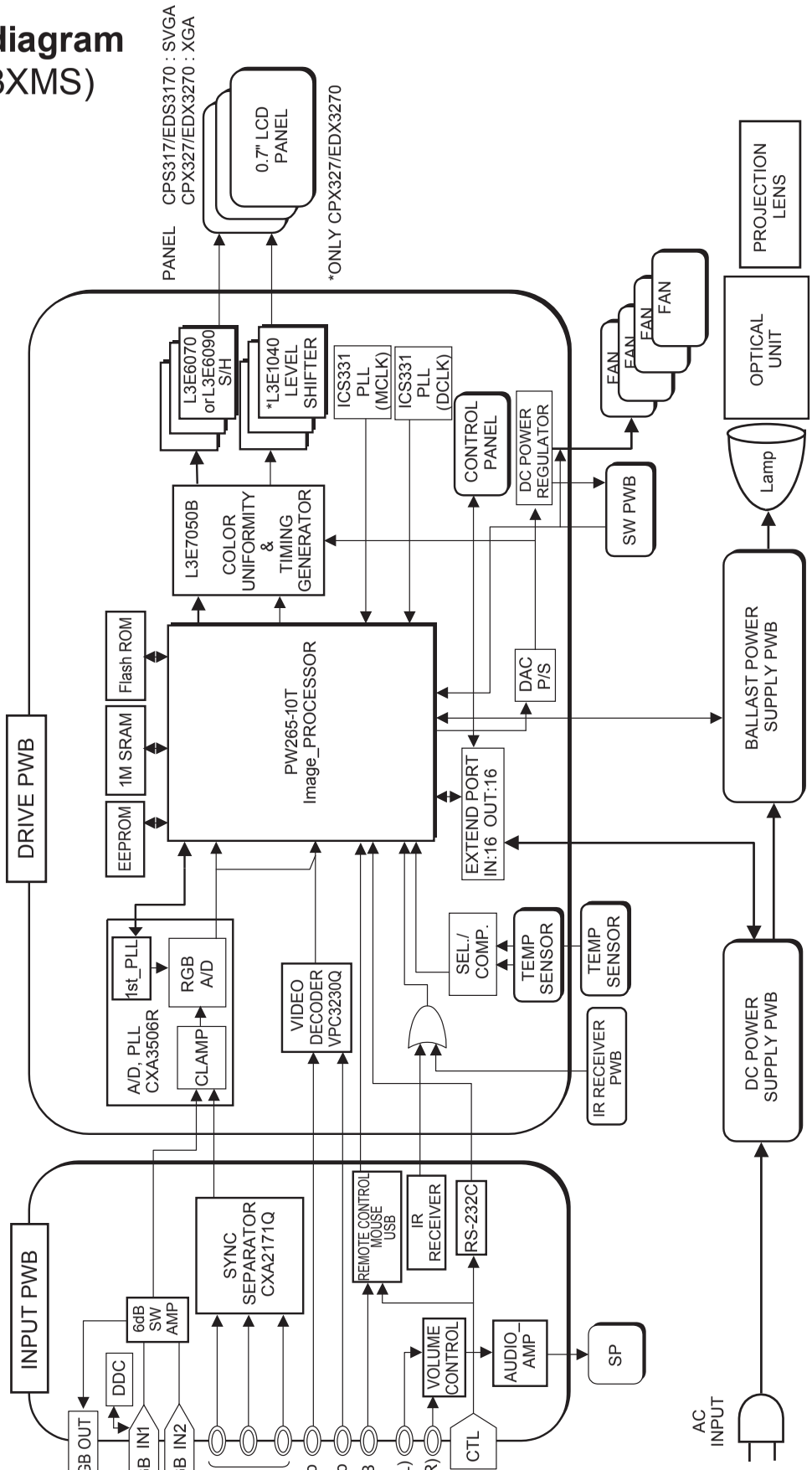
● EDS3170A & EDX3270A
Set operating time display method (accumulated lamp time display method)

1.Select [Option] from the [Menu] display,,then select [Lamp Time].
2.Press the [Reset]button once,then press [Keystone]for 3 seconds or more to display the screen shown below.(The menu will close after 10 seconds if there are no further operations.)
3.Use “▼” or “▲” to select the usage status number.. (The usage status is as shown below.)

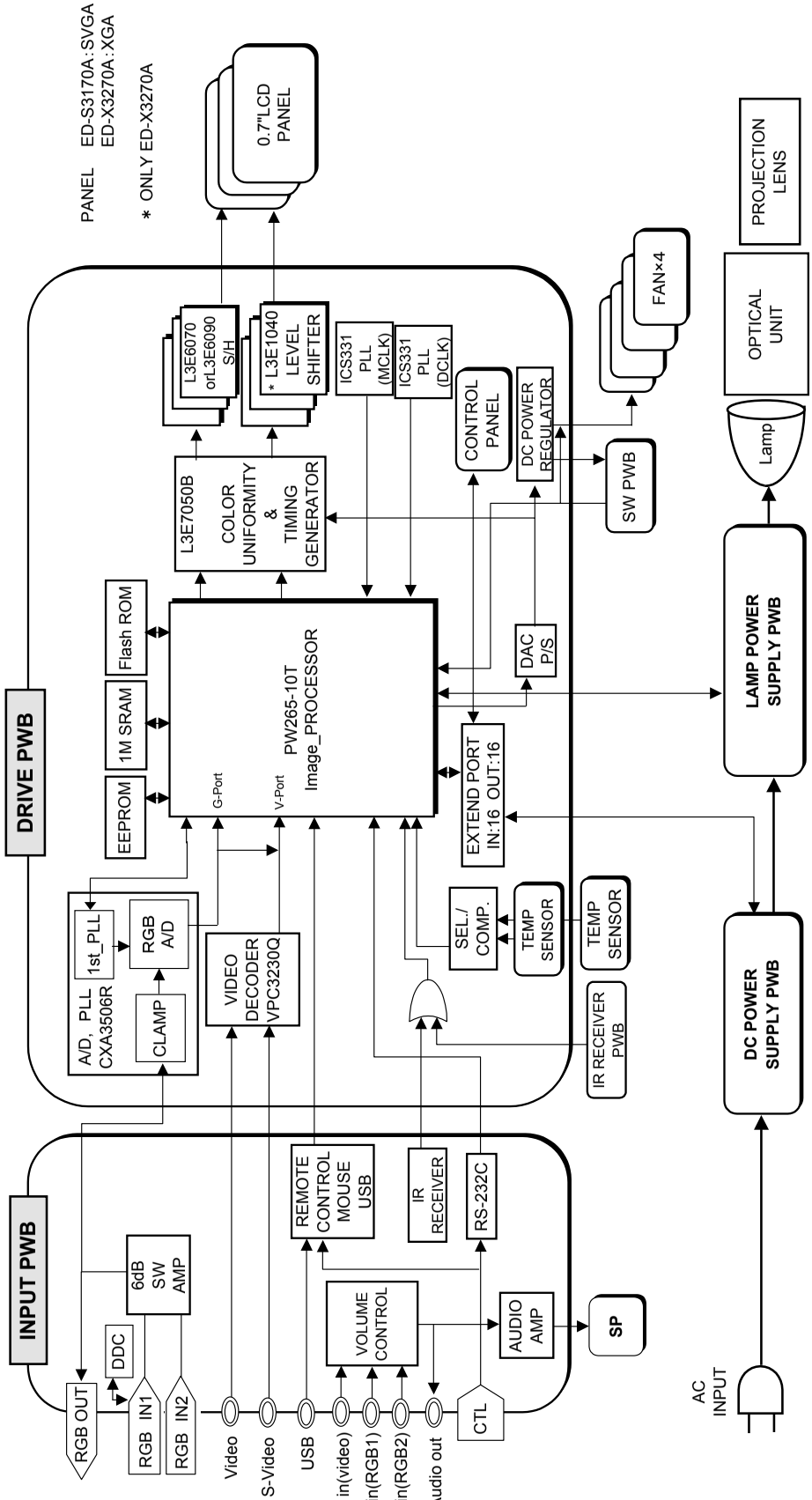


Usage status number
0 .....Total usage status
1 .....Current usage status
2 .....Usage status before first reset
3 .....Usage status before second reset
||
8 .....Usage status before seventh reset

7. Block diagram
(C3S3, C3XMS)

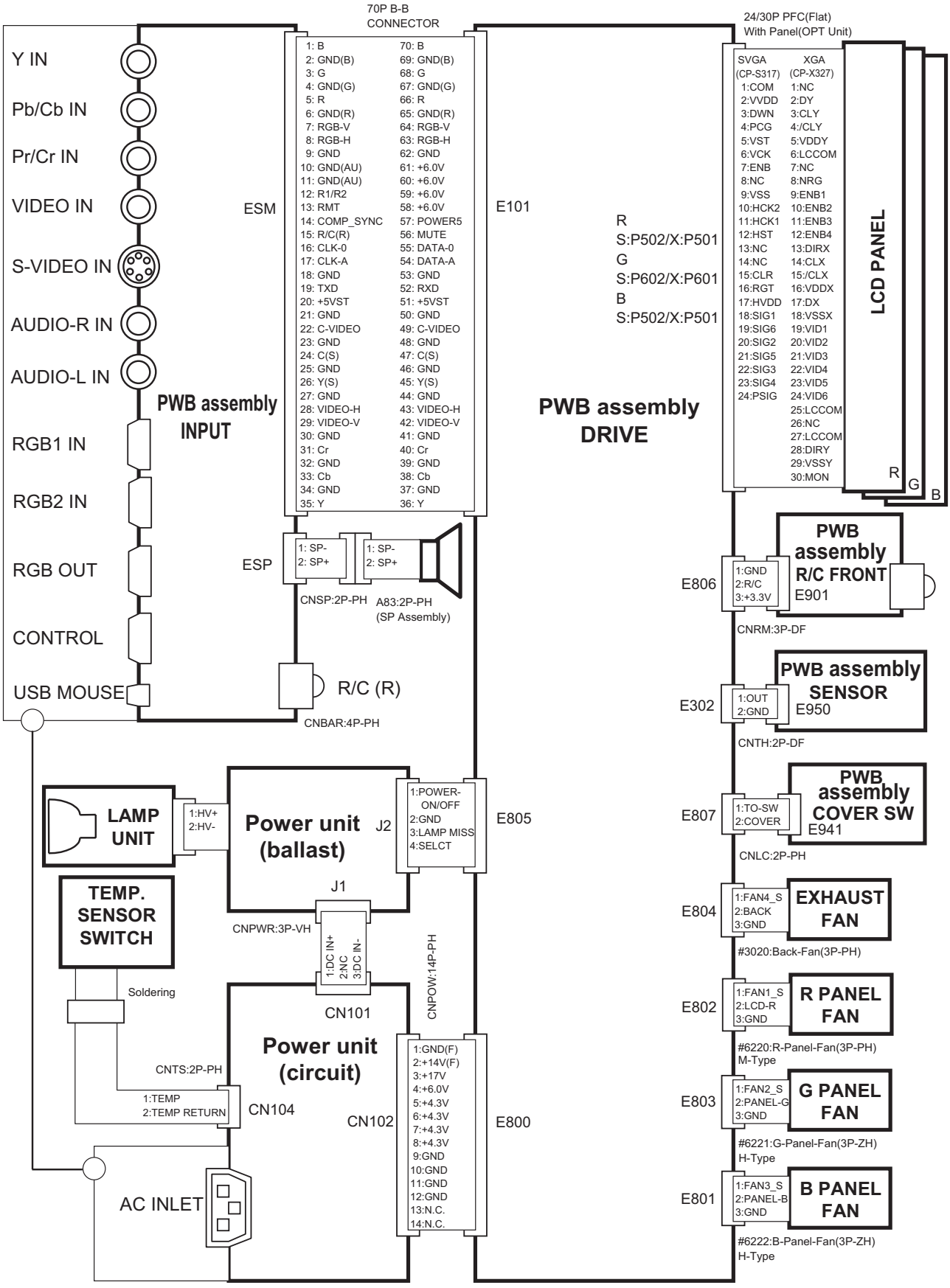


Block diagram (C3S3E, C3XM3E)

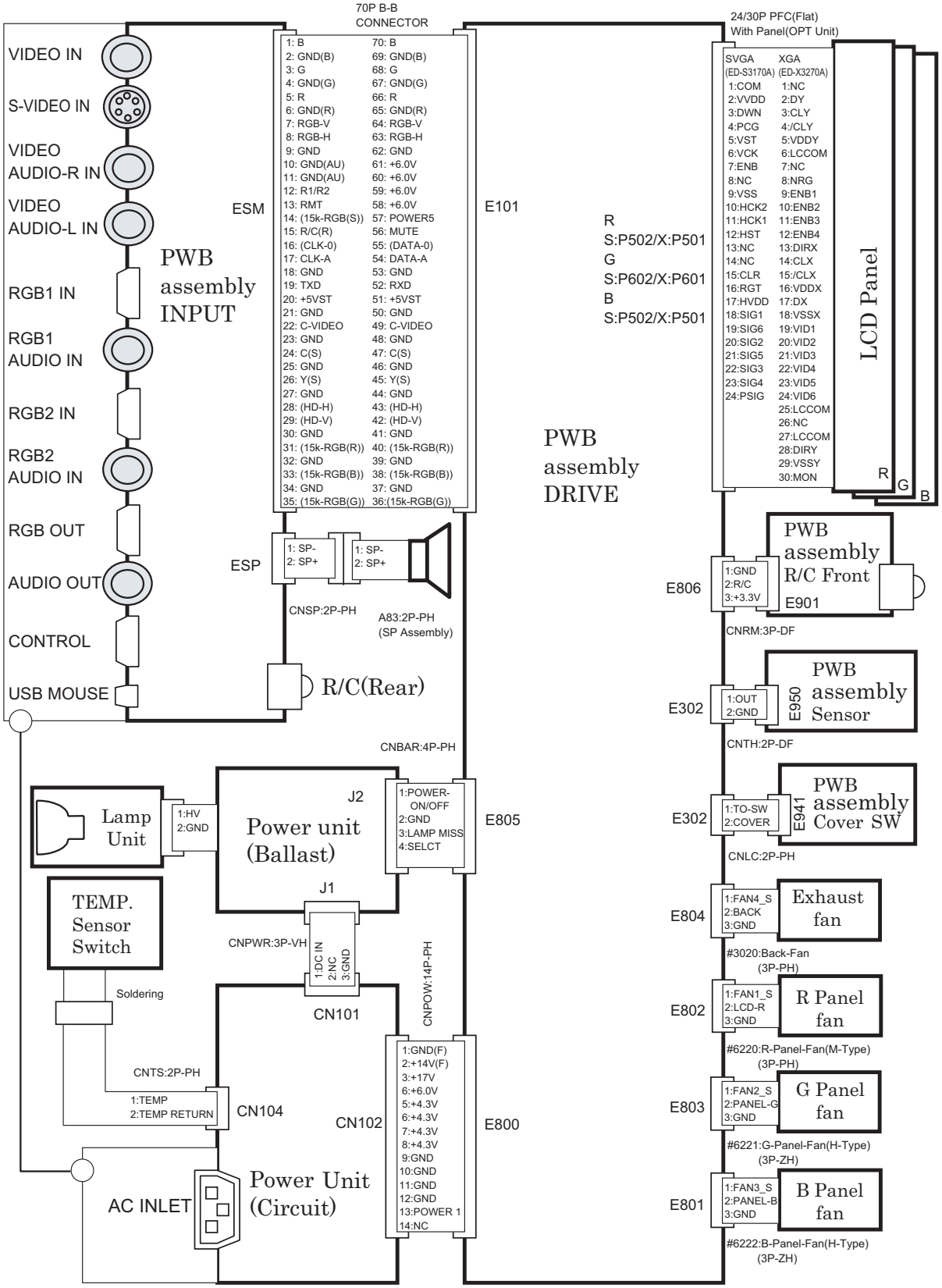


Block diagram (C3S3E/C3XM3E)

8. Connector connection diagram (C3S3, C3XM3)



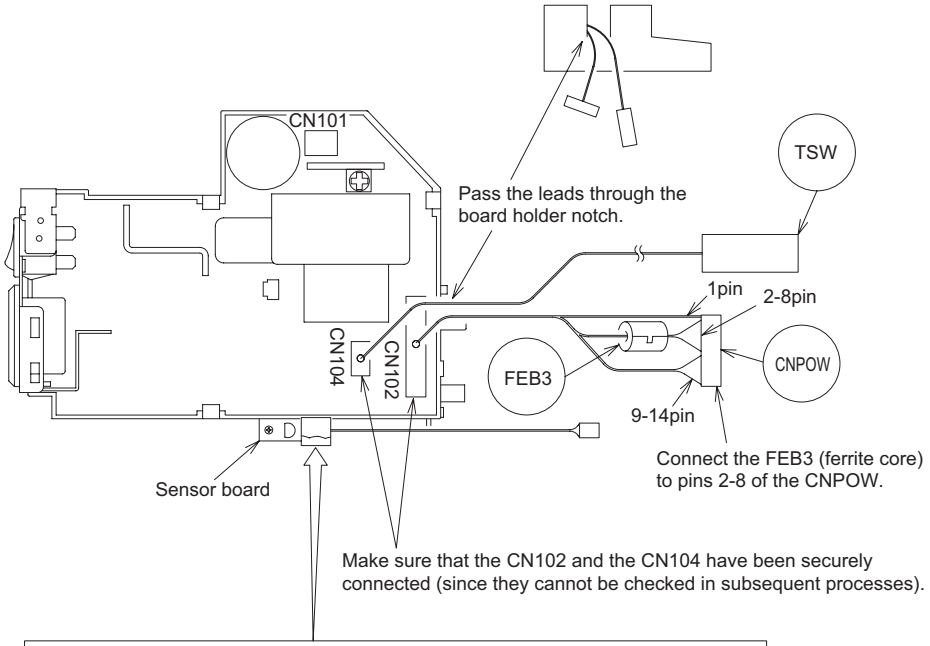
Connector connection diagram (C3S3E, C3XM3E)



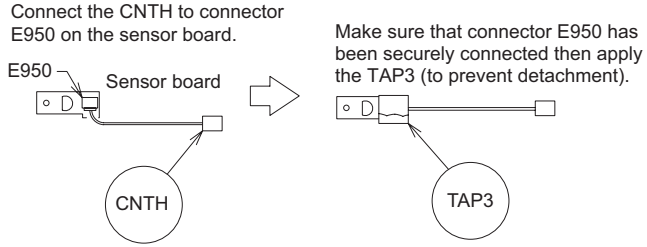
Connector connection diagram (C3S3E/C3XM3E)

Wiring for Circuit Power Supply and Ballast Power Supply Boards

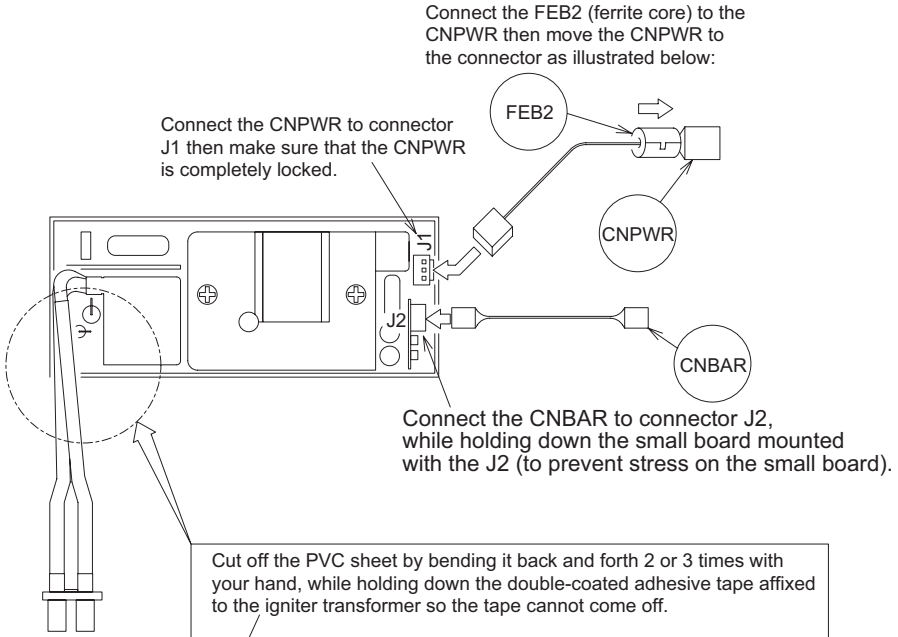
Wiring for Circuit Power Supply Board
(1) Keep a record of the circuit power supply lot number in the 100% inspection record.
(2) Connect the TSW.
(3) Install the FEB3.
(4) Connect the CNPOW.
(5) Connect the CNTH.
(6) Apply the TAP3.

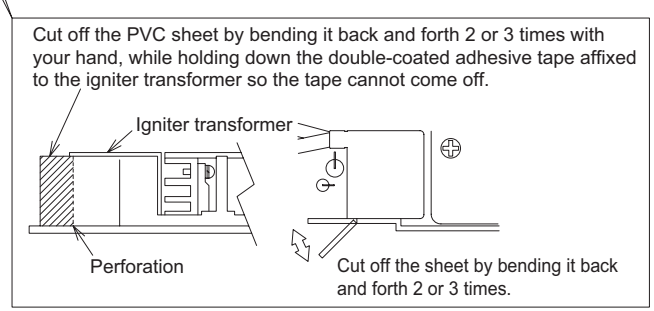


Install the sensor board after completing the following steps:


Connect the CNTH to connector E950 on the sensor board.
E950
Sensor board
CNTH
Make sure that connector E950 has been securely connected then apply the TAP3 (to prevent detachment).
TAP3

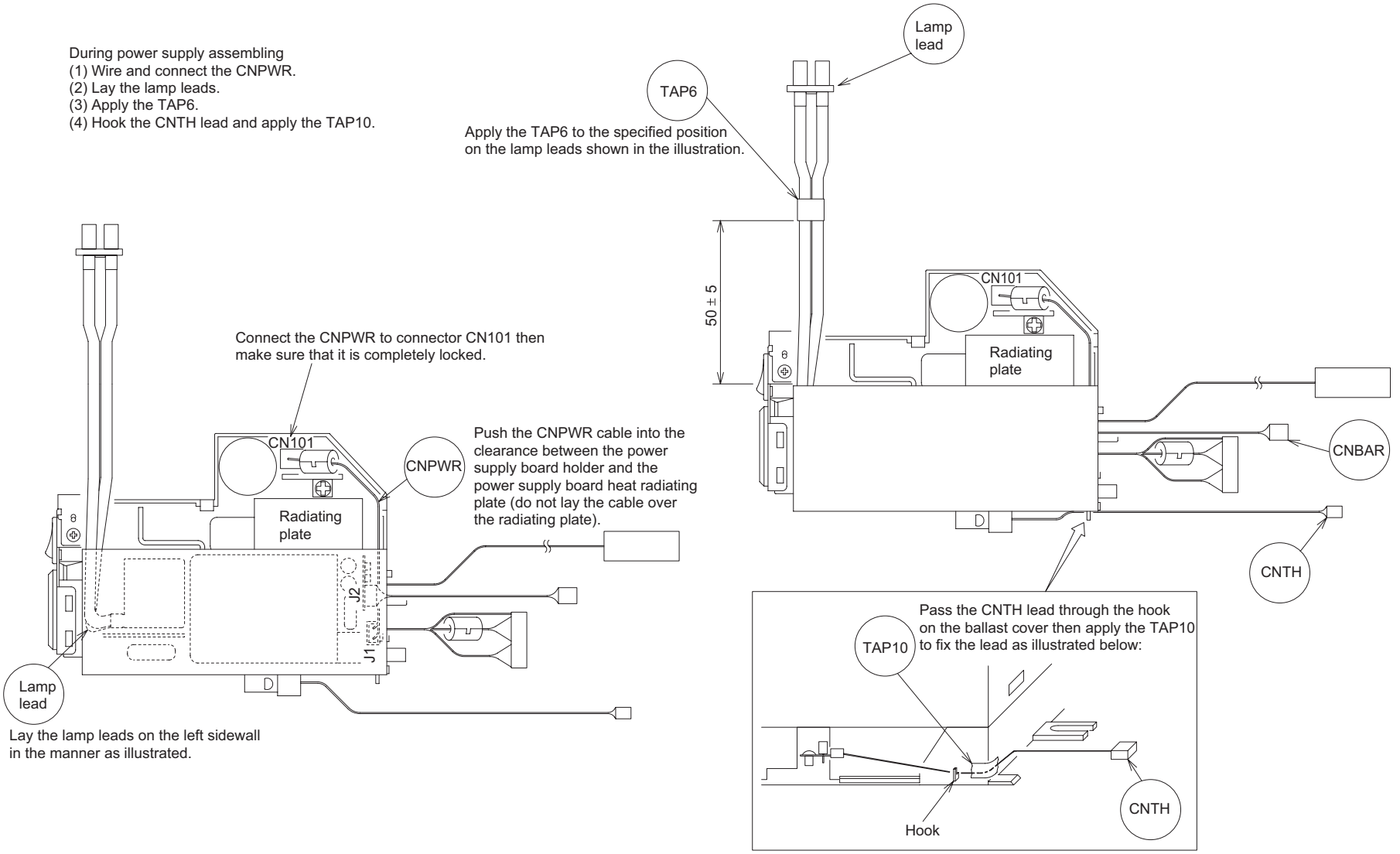
Wiring for Ballast Power Supply Board
(1) Keep a record of the ballast power supply lot number in the 100% inspection record.
(2) Cut off the PVC sheet.
(3) Connect the CNPWR.
(4) Install the FEB2.
(5) Connect the CNBAR.
(6) Install the ballast shield (in accordance with the general assembly drawing).


Connect the FEB2 (ferrite core) to the CNPWR then move the CNPWR to the connector as illustrated below:
FEB2
Connect the CNPWR to connector J1 then make sure that the CNPWR is completely locked.
CNPWR
J1
J2
CNBAR
Connect the CNBAR to connector J2, while holding down the small board mounted with the J2 (to prevent stress on the small board).


Cut off the PVC sheet by bending it back and forth 2 or 3 times with your hand, while holding down the double-coated adhesive tape affixed to the igniter transformer so the tape cannot come off.
Igniter transformer
Perforation
Cut off the sheet by bending it back and forth 2 or 3 times.

Wiring for Power Supply (for Board Sub-assembling)

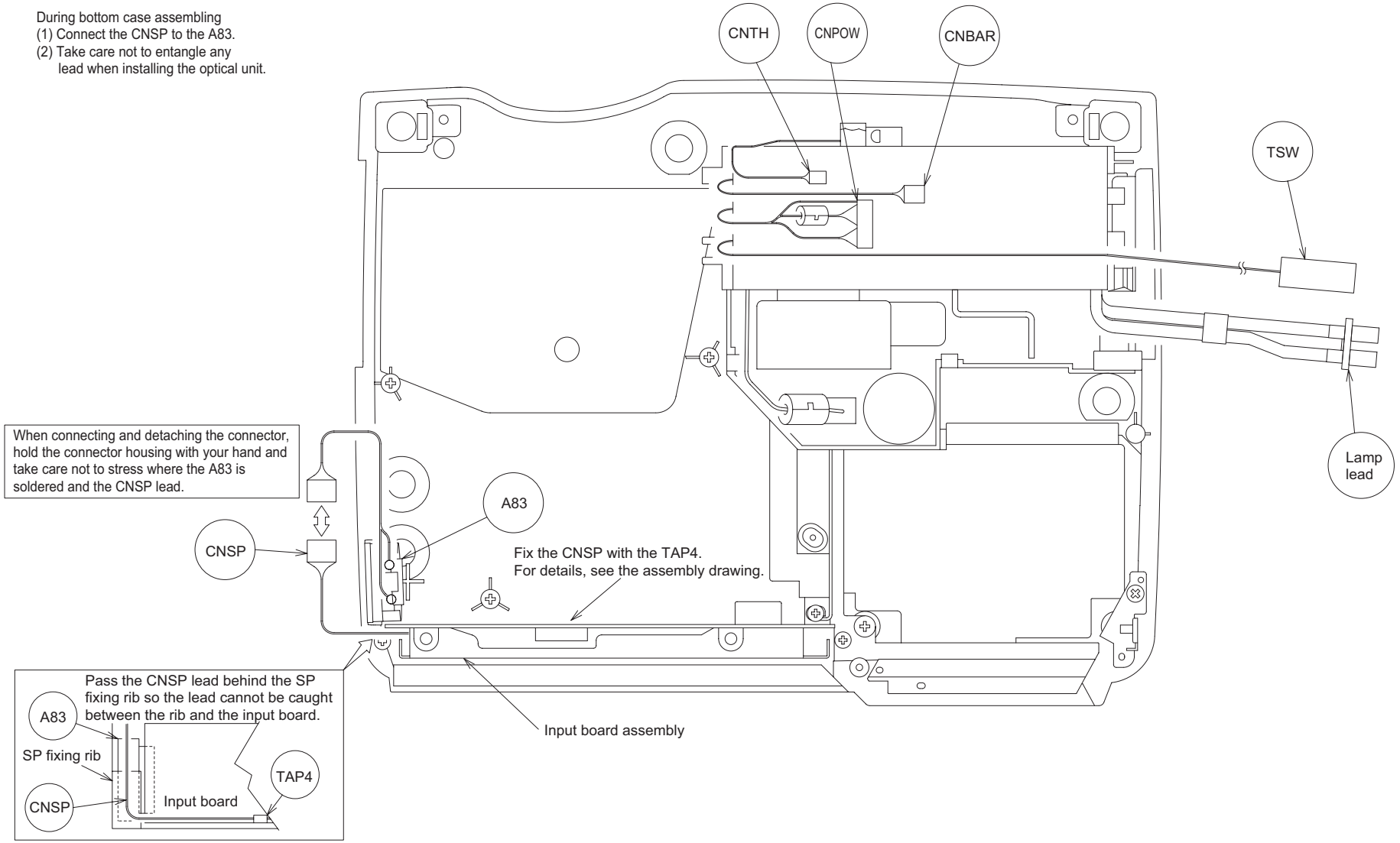
During power supply assembling
(1) Wire and connect the CNPWR.
(2) Lay the lamp leads.
(3) Apply the TAP6.
(4) Hook the CNTH lead and apply the TAP10.


Lamp lead
TAP6
Apply the TAP6 to the specified position on the lamp leads shown in the illustration.
50 ± 5
CN101
Radiating plate
CNBAR
CNTH
Connect the CNPWR to connector CN101 then make sure that it is completely locked.
CN101
CNPWR
Radiating plate
Push the CNPWR cable into the clearance between the power supply board holder and the power supply board heat radiating plate (do not lay the cable over the radiating plate).
J2
J1
Lamp lead
Lay the lamp leads on the left sidewall in the manner as illustrated.
Pass the CNTH lead through the hook on the ballast cover then apply the TAP10 to fix the lead as illustrated below:
TAP10
CNTH
Hook

Wiring for Bottom Case Assembling

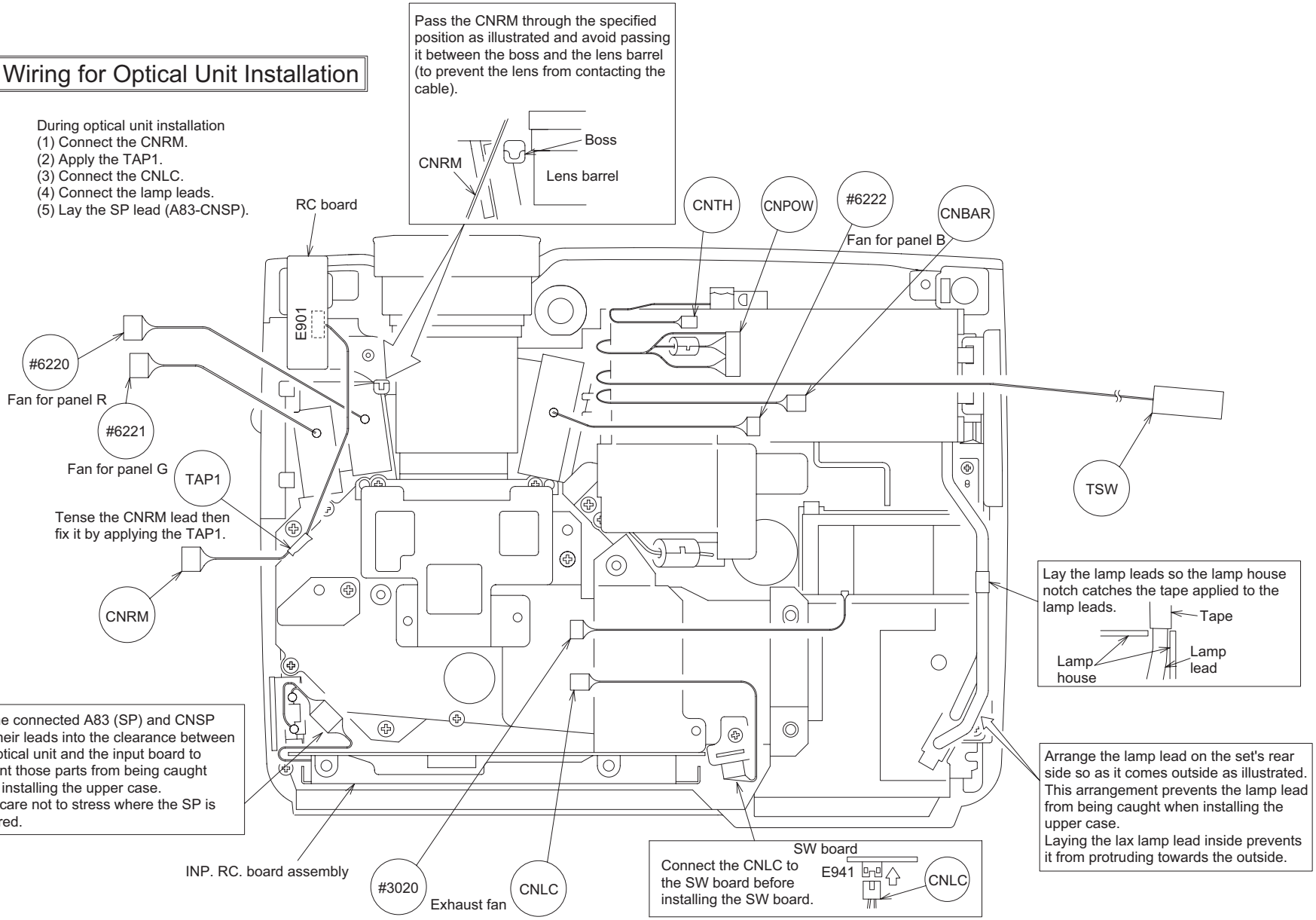
Before installing the optical unit, put all of leads away from where the optical unit is installed as illustrated below so no lead can become entangled.

During bottom case assembling
(1) Connect the CNSP to the A83.
(2) Take care not to entangle any lead when installing the optical unit.


CNTH
CNPOW
CNBAR
TSW
Lamp lead
When connecting and detaching the connector, hold the connector housing with your hand and take care not to stress where the A83 is soldered and the CNSP lead.
A83
CNSP
Fix the CNSP with the TAP4.
For details, see the assembly drawing.
Input board assembly
Pass the CNSP lead behind the SP fixing rib so the lead cannot be caught between the rib and the input board.
A83
SP fixing rib
CNSP
Input board
TAP4

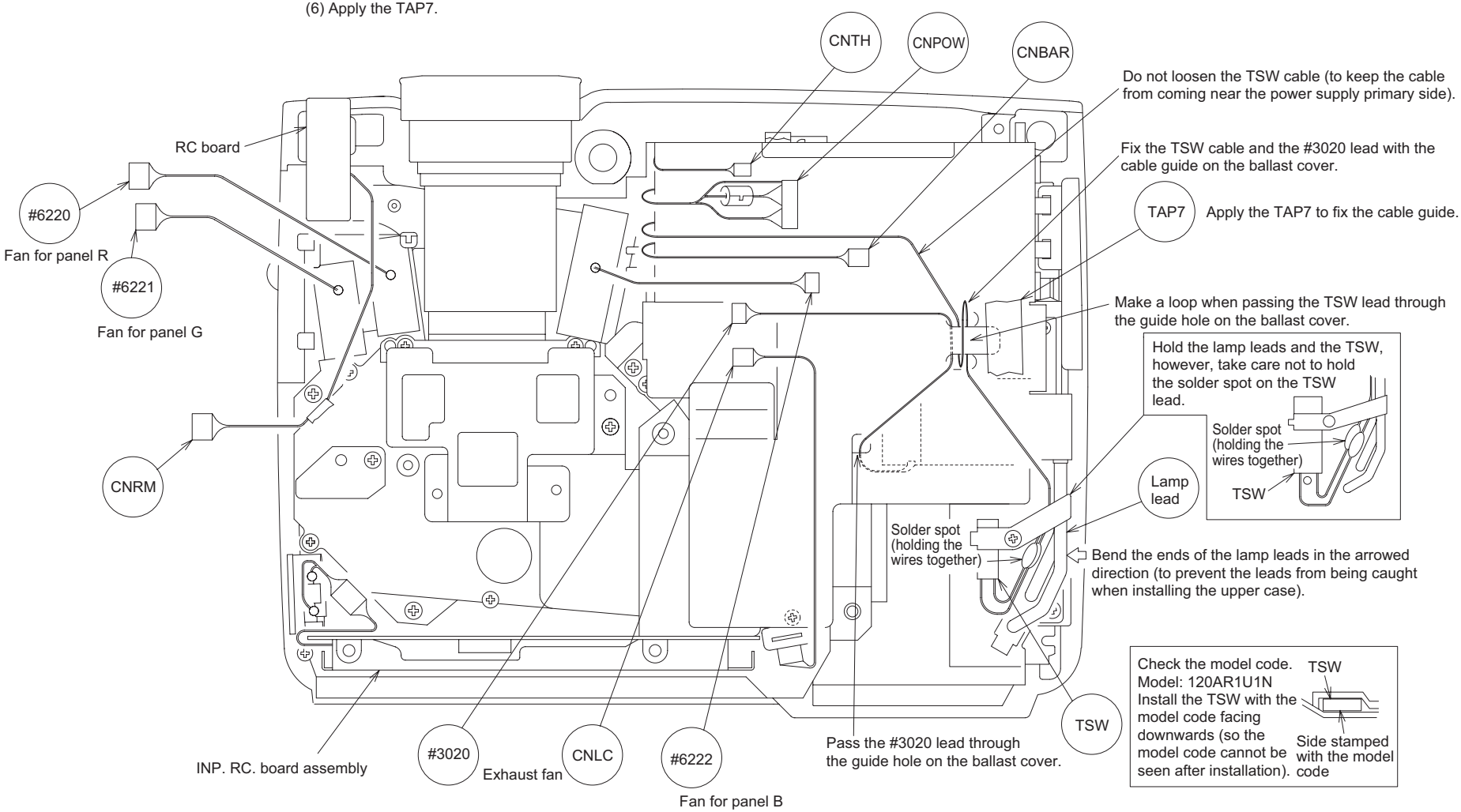
Wiring for Optical Unit Installation

During optical unit installation
(1) Connect the CNRM.
(2) Apply the TAP1.
(3) Connect the CNLC.
(4) Connect the lamp leads.
(5) Lay the SP lead (A83-CNSP).


Pass the CNRM through the specified position as illustrated and avoid passing it between the boss and the lens barrel (to prevent the lens from contacting the cable).
Boss
CNRM
Lens barrel
RC board
E901
CNTH
CNPOW
#6222
CNBAR
Fan for panel B
#6220
Fan for panel R
#6221
Fan for panel G
TAP1
Tense the CNRM lead then fix it by applying the TAP1.
CNRM
TSW
Lay the lamp leads so the lamp house notch catches the tape applied to the lamp leads.
Tape
Lamp house
Lamp lead
Put the connected A83 (SP) and CNSP and their leads into the clearance between the optical unit and the input board to prevent those parts from being caught when installing the upper case.
Take care not to stress where the SP is soldered.
INP. RC. board assembly
#3020
Exhaust fan
CNLC
SW board
Connect the CNLC to the SW board before installing the SW board.
E941
CNLC
Arrange the lamp lead on the set's rear side so as it comes outside as illustrated. This arrangement prevents the lamp lead from being caught when installing the upper case.
Laying the lax lamp lead inside prevents it from protruding towards the outside.

Wiring before Drive Board Installation

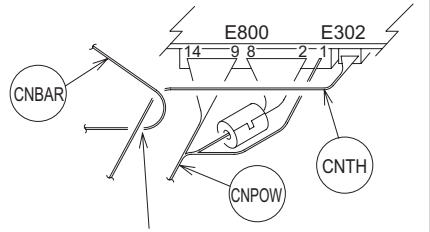
Before drive board installation
(1) Wire the CNBAR.
(2) Wire and install the TSW.
(3) Lay and fix the lamp leads.
(4) Lay the #3020 lead.
(5) Wire the TSW.
(6) Apply the TAP7.


CNTH
CNPOW
CNBAR
RC board
#6220
Fan for panel R
#6221
Fan for panel G
CNRM
INP. RC. board assembly
#3020
Exhaust fan
CNLC
#6222
Fan for panel B
Do not loosen the TSW cable (to keep the cable from coming near the power supply primary side).
Fix the TSW cable and the #3020 lead with the cable guide on the ballast cover.
TAP7
Apply the TAP7 to fix the cable guide.
Make a loop when passing the TSW lead through the guide hole on the ballast cover.
Hold the lamp leads and the TSW, however, take care not to hold the solder spot on the TSW lead.
Solder spot (holding the wires together)
TSW
Lamp lead
Solder spot (holding the wires together)
Bend the ends of the lamp leads in the arrowed direction (to prevent the leads from being caught when installing the upper case).
TSW
Pass the #3020 lead through the guide hole on the ballast cover.
Check the model code.
Model: 120AR1U1N
Install the TSW with the model code facing downwards (so the model code cannot be seen after installation).
TSW
Side stamped with the model code

Wiring for Drive Board Installation

Procedure

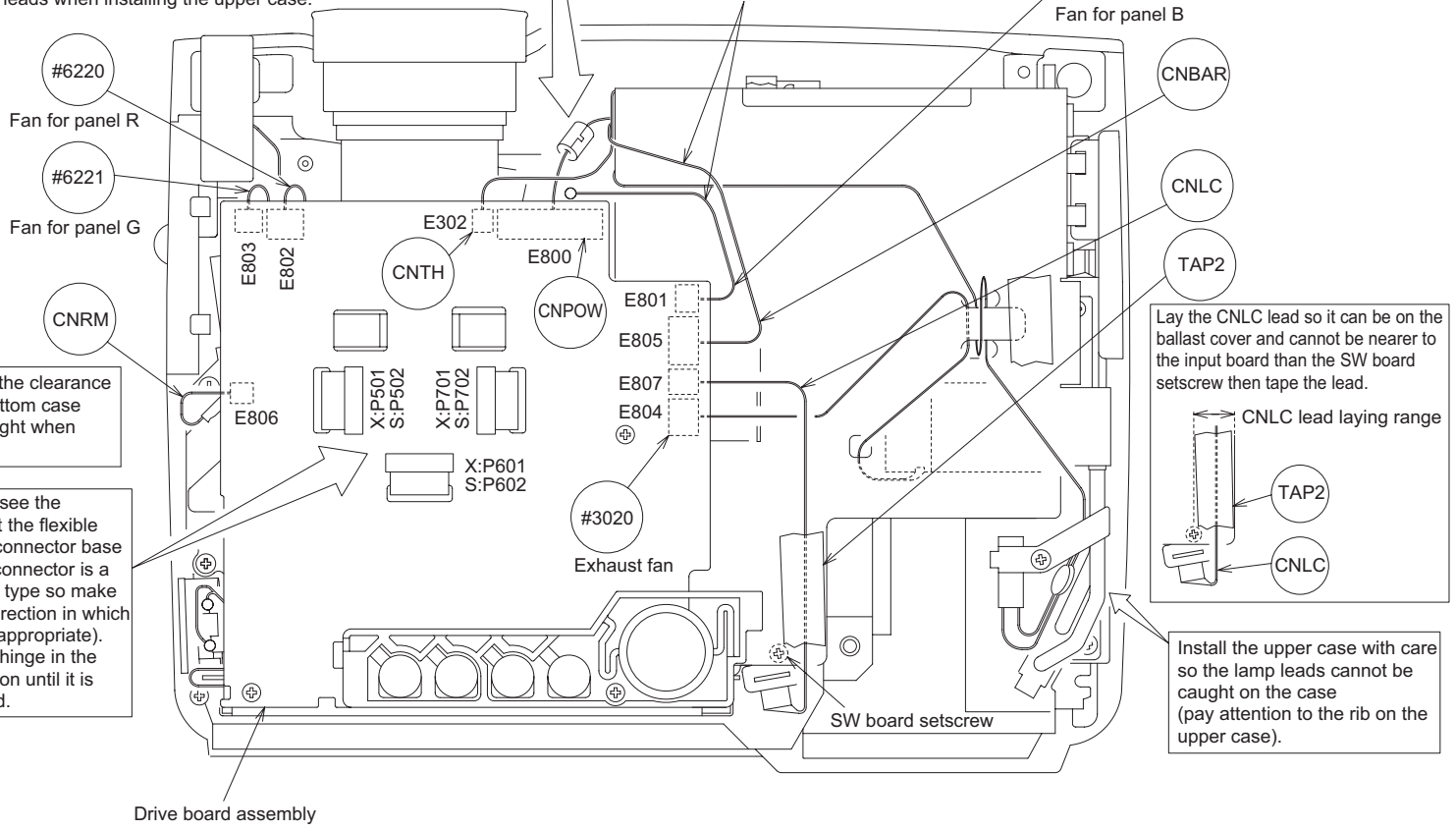
(1) Before installing the drive board, connect the CNBAR and the #6222 while holding the drive board with your hand.
(2) Put the drive board in the position where you install it then connect the CNTH, the CNPOW, the #6220 and the #6221 while lifting the rear of the board.
(3) Connect the CNRM, the CNLC, the #3020 and the panel flexible cable.



Entwine the CNBAR lead with the CNTH lead (to prevent them from contacting the primary side of the power supply).

During drive board installation
(1) Connect the CNTH, the CNPOW, the #6220 and the #6221.
(2) Wire and connect the CNBAR and the #6222.
(3) Connect the CNRM, the CNLC and the #3020.
(4) Apply the TAP2.
(5) Connect the flexible cable for the liquid crystal panel.
(6) Take care not to entangle the lamp leads when installing the upper case.

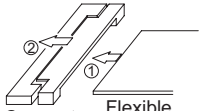
Pass the #6222 lead over the ballast cover (if the lead is passed from the side of the ballast power supply, it will contact the power supply primary side).



Put the connector CNRM lead into the clearance between the optical unit and the bottom case (to prevent the lead from being caught when installing the upper case).

Lay the CNLC lead so it can be on the ballast cover and cannot be nearer to the input board than the SW board setscrew then tape the lead.

For details on flexible cable installation, see the following drawing:

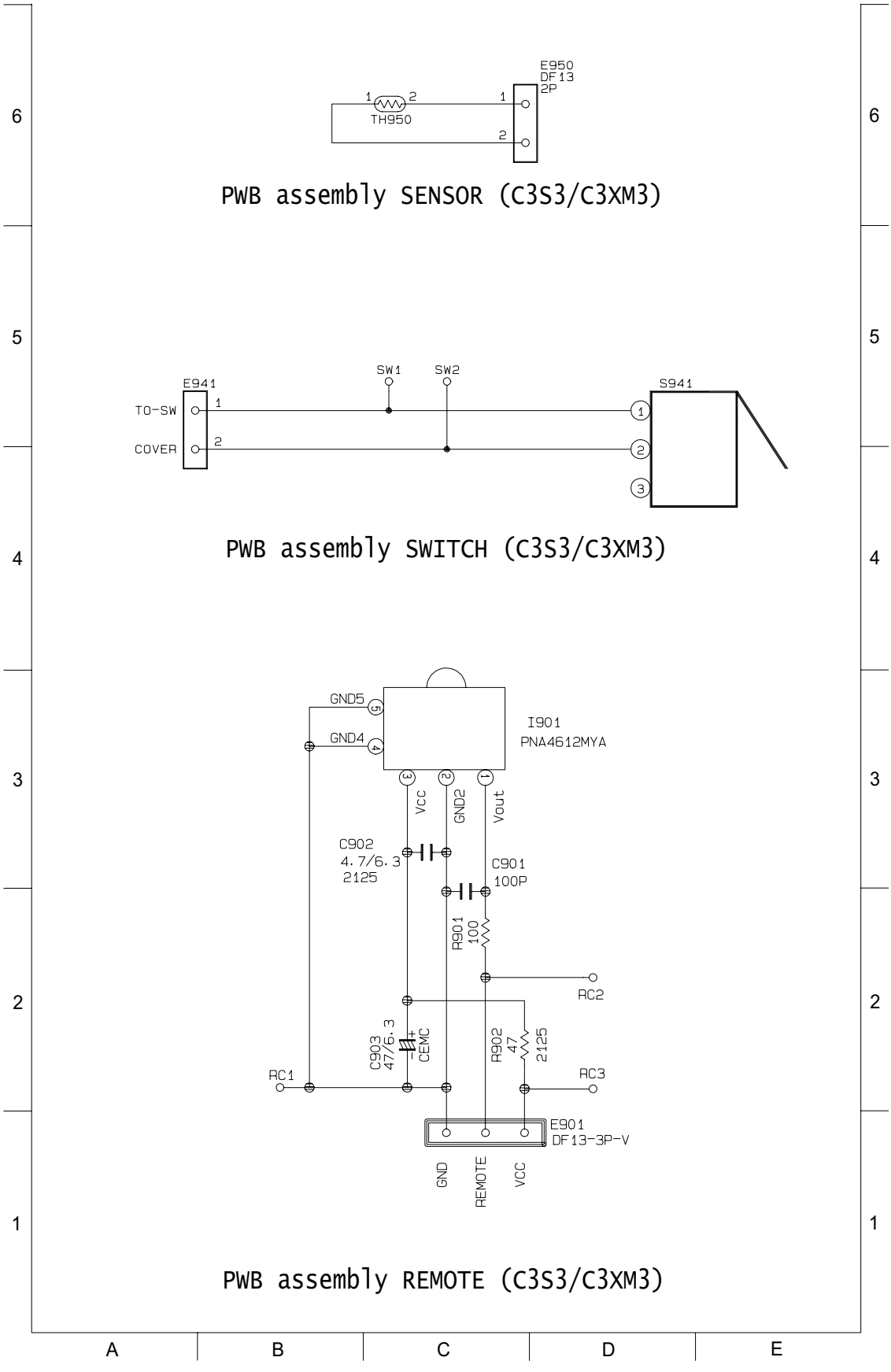


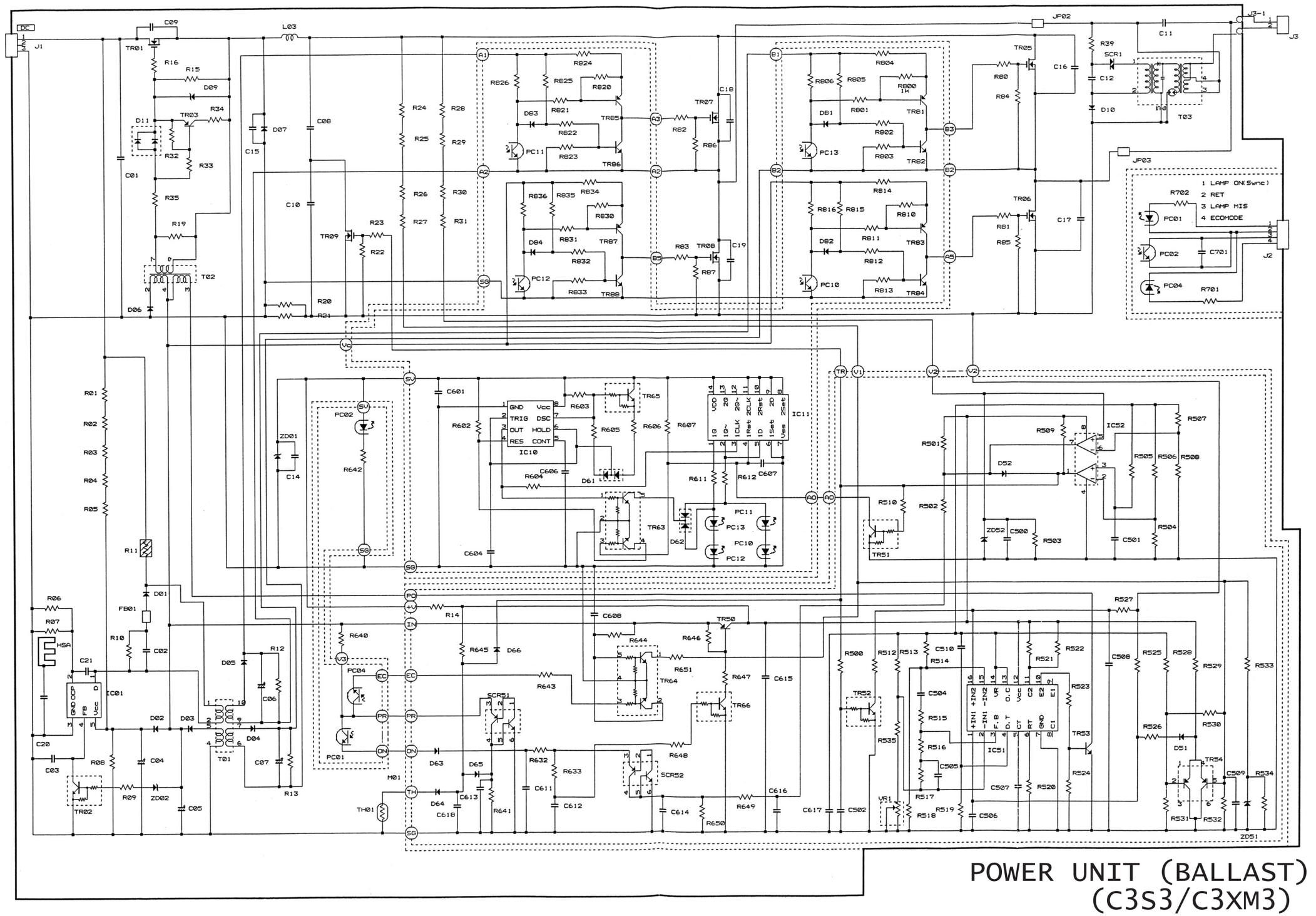
(1) Securely insert the flexible cable into the connector base (note that the connector is a bottom contact type so make sure that the direction in which you insert it is appropriate).
(2) Move the lock hinge in the arrowed direction until it is securely locked.

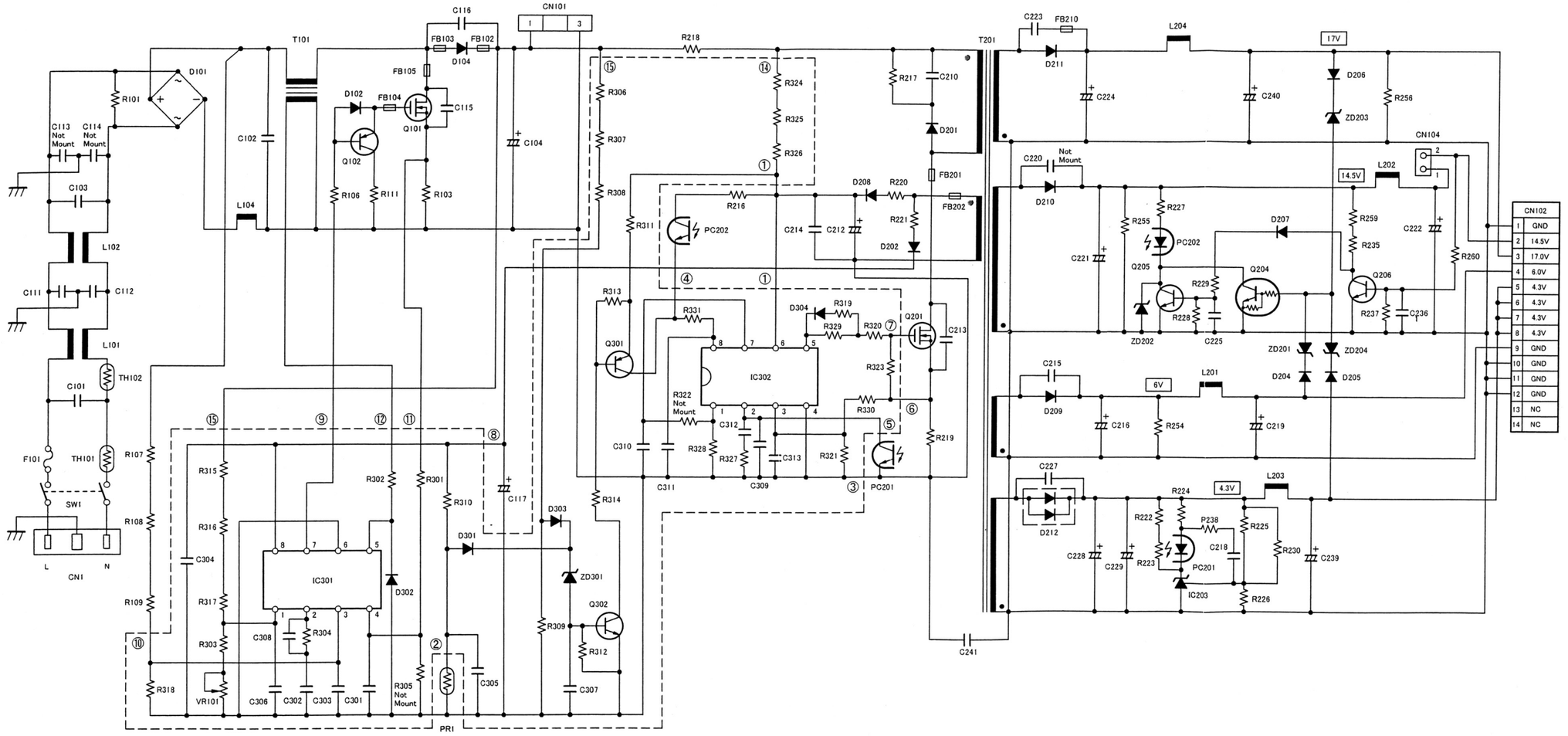
Install the upper case with care so the lamp leads cannot be caught on the case (pay attention to the rib on the upper case).

10. Basic circuit diagram

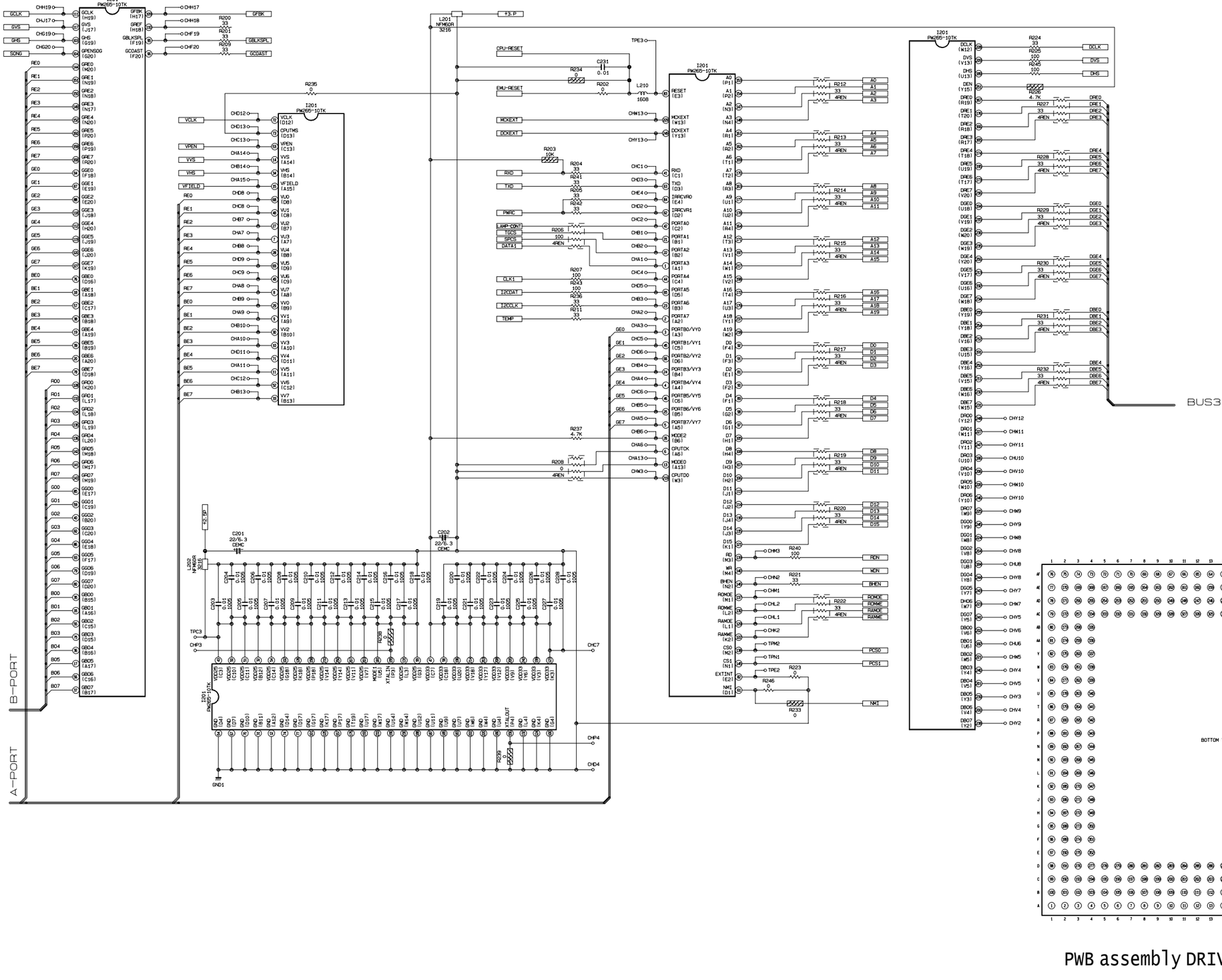
Parts with hatching are not mounted.



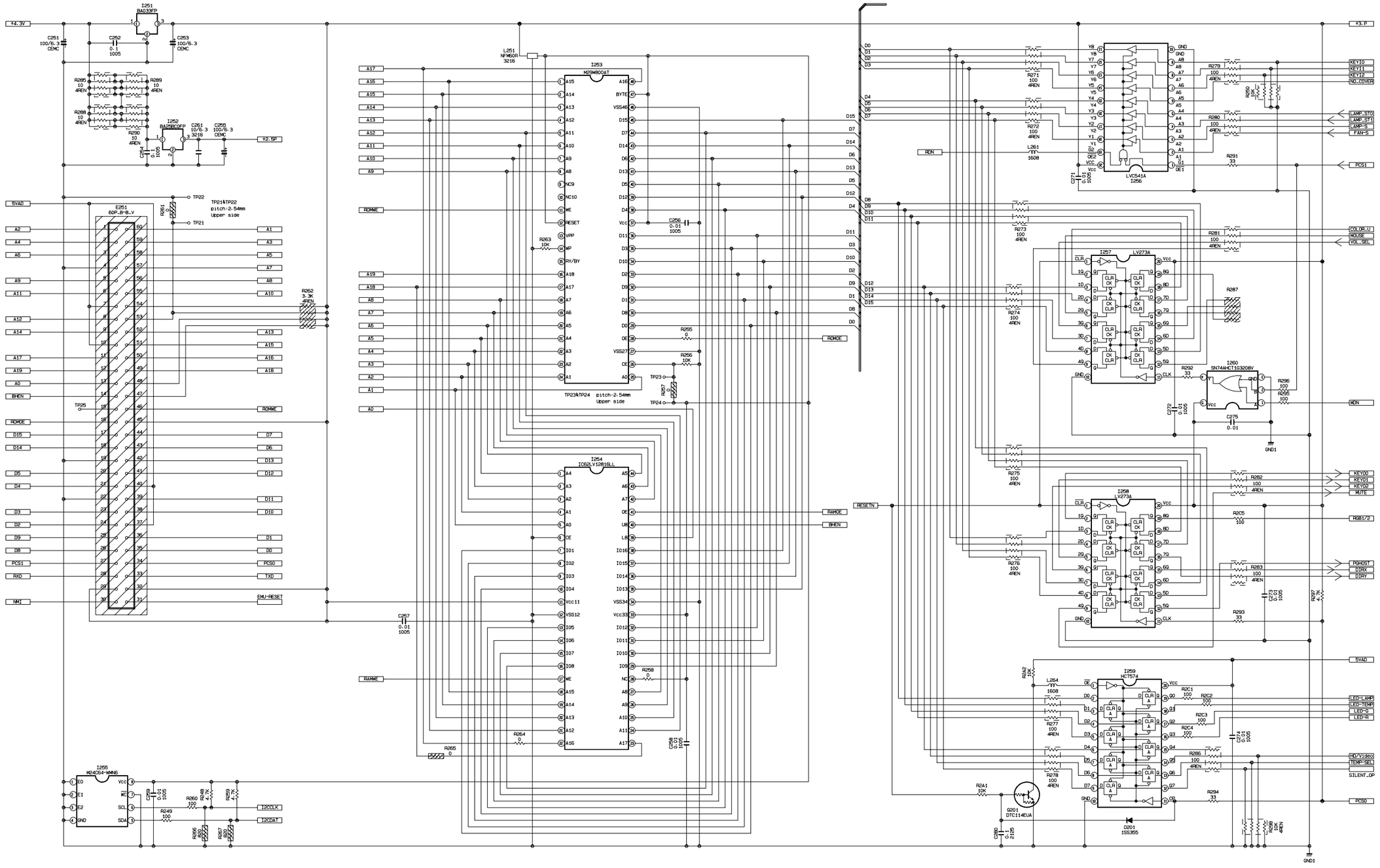

POWER UNIT (BALLAST)
(C3S3/C3XM3)
1 LAMP ON(Sync)
2 RET
3 LAMP MIS
4 ECOMODE
GND Vcc
TRIG DSC
OUT HOLD
RES CONT
IC10
VDD 2Q 2Q- 2CLK 2Rst 2D 2Set Vss
1Q 1Q- 1CLK 1Rst 1D 1Set
IC11
GND OCP FB Vcc D
IC01
+IN1 +IN2 -IN1 -IN2 F.B D.T CT RT GND C1 E1 E2 C2 O.C VR Vcc
IC51
IC52
SCR1
SCR51
SCR52
TR01
TR02
TR03
TR05
TR06
TR07
TR08
TR09
TR50
TR51
TR52
TR53
TR54
TR63
TR64
TR65
TR66
TR81
TR82
TR83
TR84
TR85
TR86
TR87
TR88
T01
T02
T03
J1
J2
J3
JP02
JP03
PC01
PC02
PC04
PC10
PC11
PC12
PC13
D01
D02
D03
D04
D05
D06
D07
D08
D09
D10
D11
D51
D52
D61
D62
D63
D64
D65
D66
D81
D82
D83
D84
ZD01
ZD02
ZD51
ZD52
TH01
VR1
HSA
FB01
M01
SG
EC
PR
ON
PC
IN
TH
V1
V2
V3
A0
A1
A2
A3
B1
B2
B3
B5
TR
C01
C02
C03
C04
C05
C06
C07
C08
C09
C10
C11
C12
C14
C15
C16
C17
C18
C19
C20
C21
C500
C501
C502
C504
C505
C506
C507
C508
C509
C510
C601
C604
C606
C607
C608
C611
C612
C613
C614
C615
C616
C617
C618
C701
L03
R01
R02
R03
R04
R05
R06
R07
R08
R09
R10
R11
R12
R13
R14
R15
R16
R19
R20
R21
R22
R23
R24
R25
R26
R27
R29
R30
R31
R32
R33
R34
R35
R39
R80
R81
R82
R84
R85
R86
R87
R501
R502
R503
R504
R505
R506
R507
R508
R509
R510
R512
R513
R514
R515
R516
R517
R518
R519
R520
R521
R522
R523
R524
R525
R526
R527
R528
R529
R530
R531
R532
R533
R534
R535
R603
R602
R604
R605
R606
R607
R611
R612
R632
R633
R641
R642
R643
R644
R645
R646
R647
R648
R649
R650
R651
R701
R702
R800 1k
R801
R802
R803
R804
R805
R806
R810
R811
R812
R813
R814
R815
R816
DC
5V
Vc



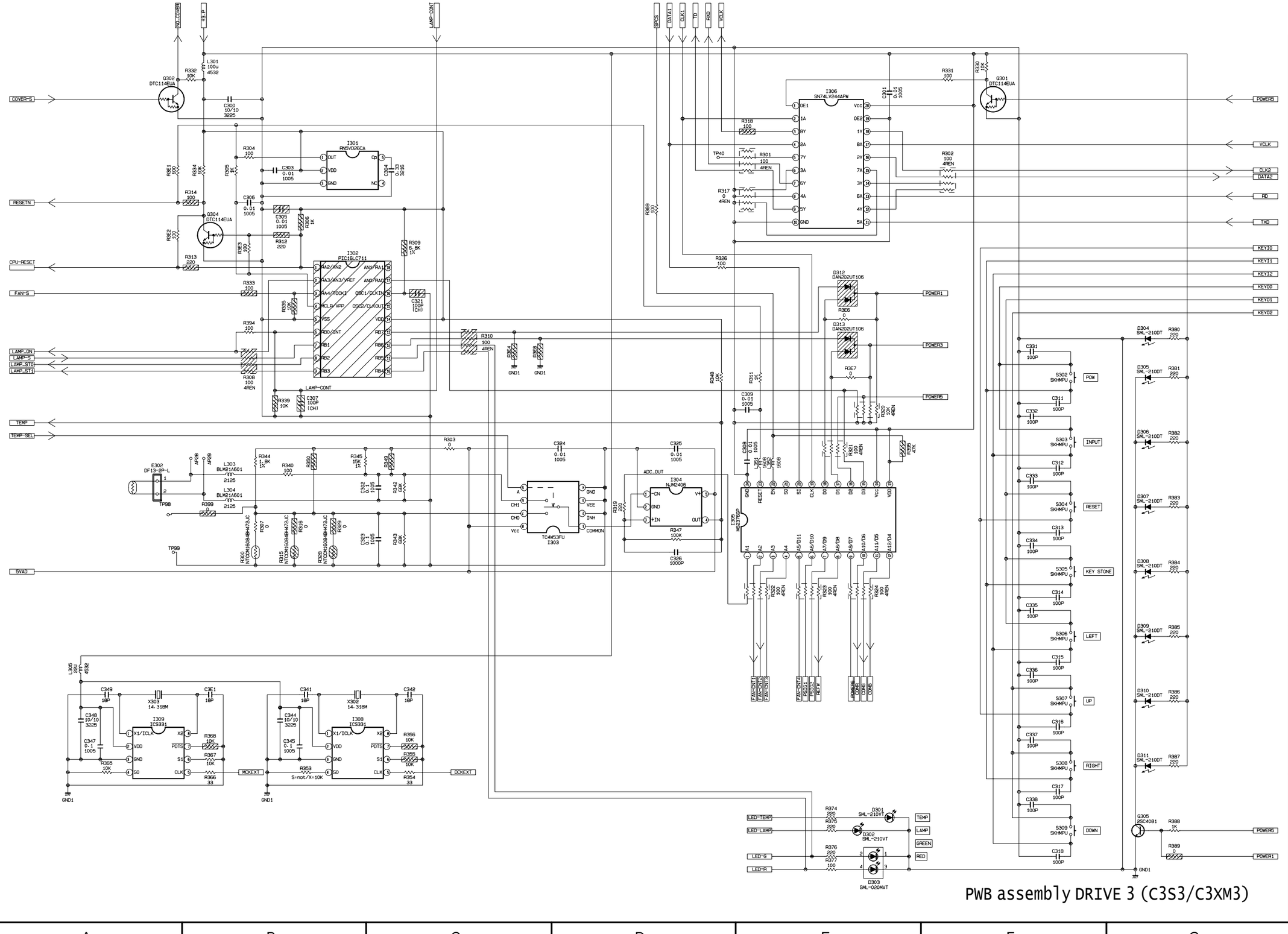
POWER UNIT (CIRCUIT)(C3S3/C3XM3)



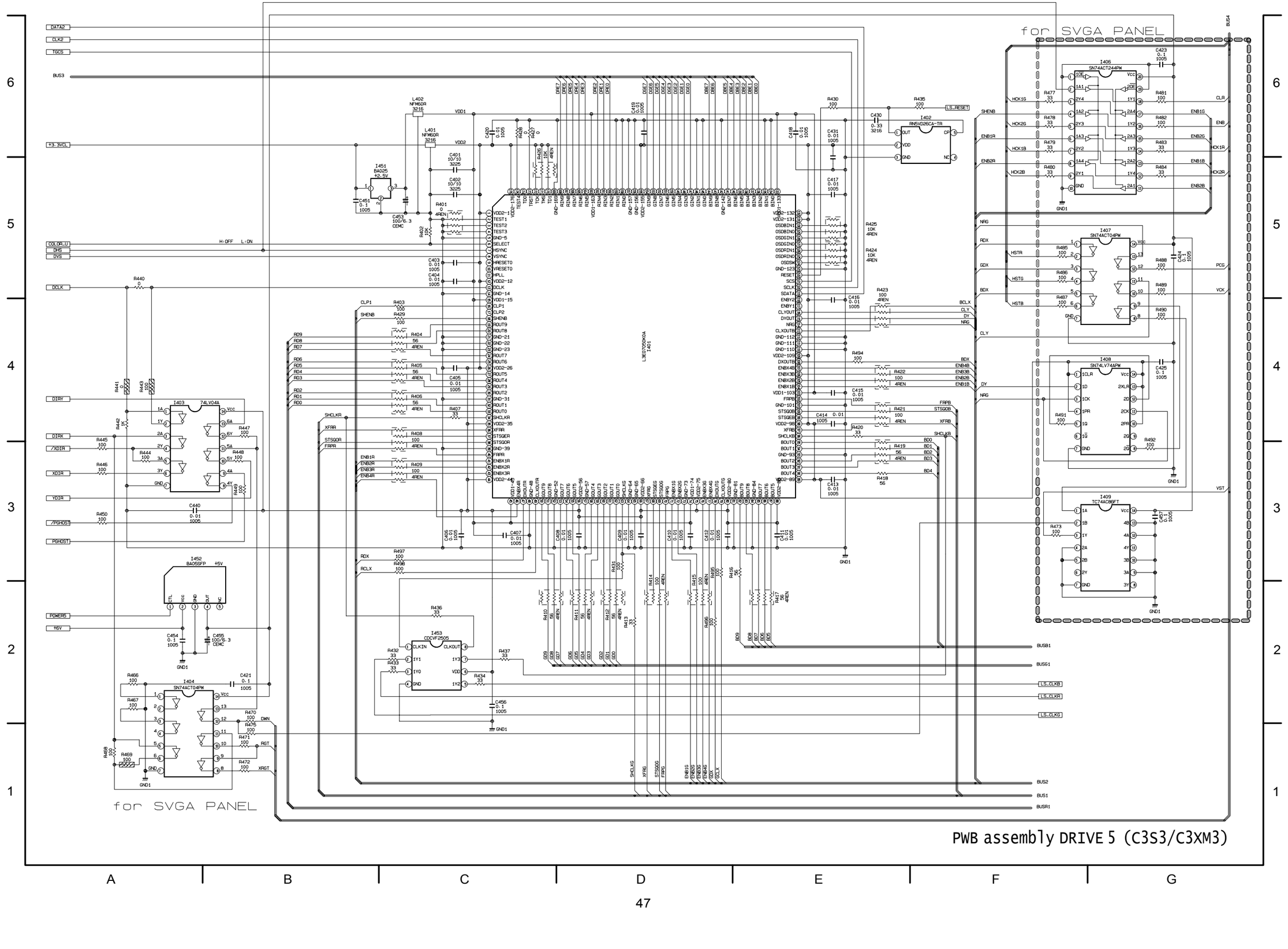
PWB assembly DRIVE 1 (C3S3/C3XM3)

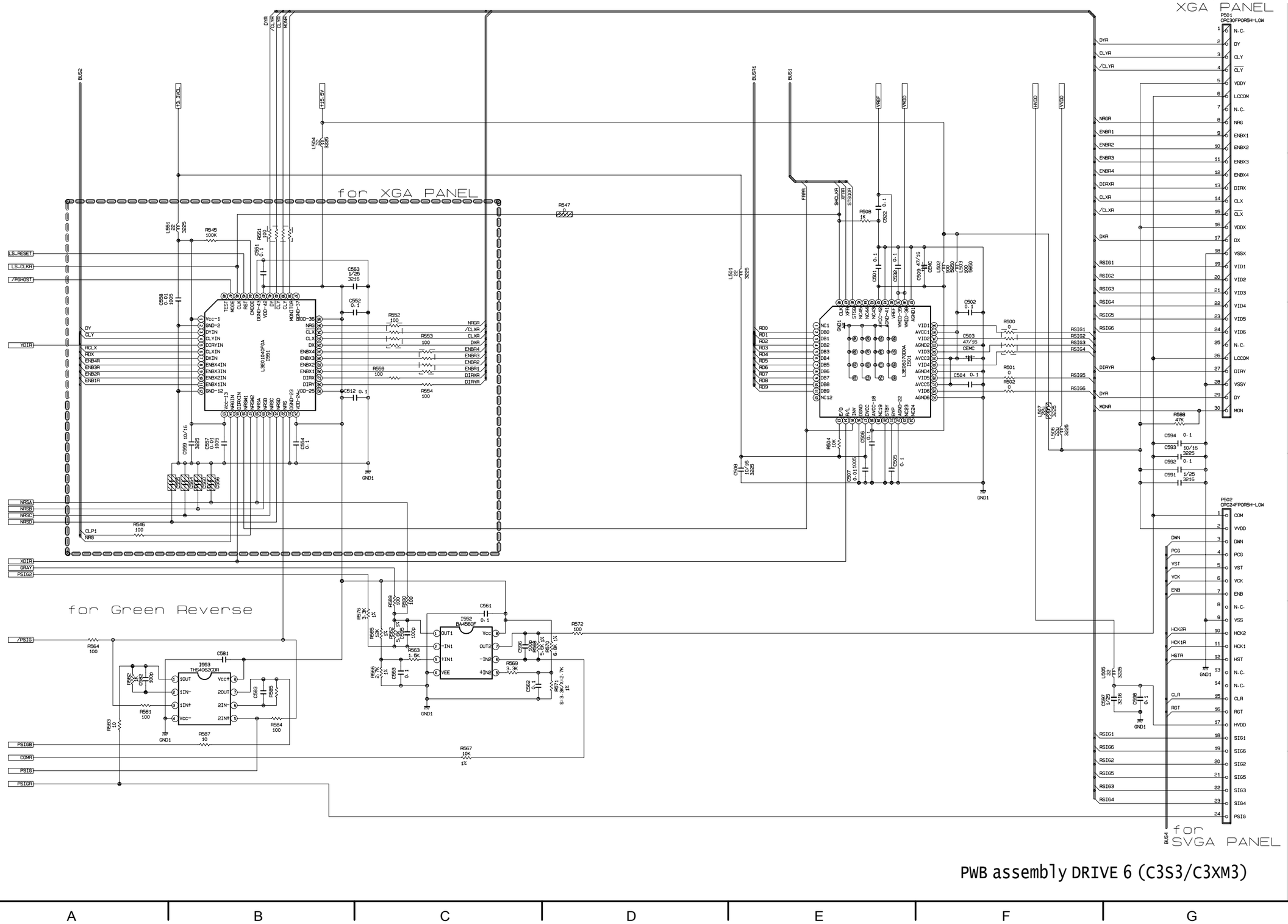


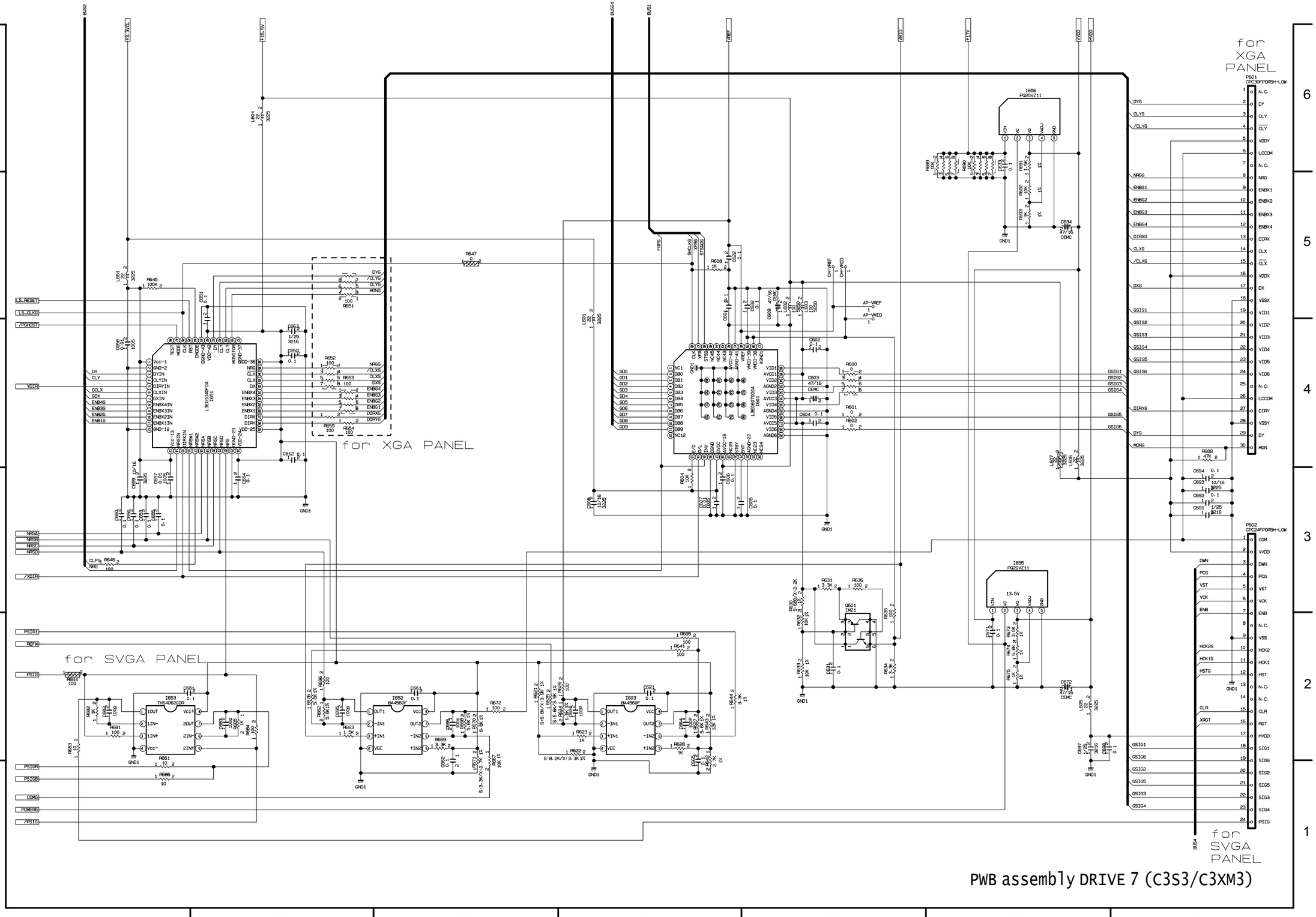
PWB assembly DRIVE 2 (C3S3/C3XM3)


NC-COVER
+3.3P
LAMP-CONT
SPCS
DATA1
CLK1
TO
RXD
VCLK
COVER-S
RESETN
CPU-RESET
FAN-S
LAMP_ON
LAMP-S
LAMP_ST0
LAMP_ST1
TEMP
TEMP-SEL
5VAD
I302 PIC16C711
I301 RN5V1D25CA
I303 TC4W53FU
I304 NJM2406
I305 MB3790P
I306 SN74LV244APW
I307 ICS331
I308 ICS331
Q301 DTC114EUA
Q302 DTC114EUA
Q304 DTC114EUA
POWER5
VCLK
CLK2
DATA2
RD
TXD
KEY10
KEY11
KEY12
KEY00
KEY01
KEY02
POWER1
POWER3
POWER5
POW
INPUT
RESET
KEY STONE
LEFT
UP
RIGHT
DOWN
MCKEXT
DCKEXT
LED-TEMP
LED-LAMP
LED-G
LED-R
TEMP
LAMP
GREEN
RED
PWB assembly DRIVE 3 (C3S3/C3XM3)

PWB assembly DRIVE 4 (C3S3/C3XM3)


for SVGA PANEL
for SVGA PANEL
PWB assembly DRIVE 5 (C3S3/C3XM3)
DATA2
CLK2
TGCS
BUS3
+3.3VCL
COLOR_U
DHS
DVS
H:OFF L:ON
DCLK
DIRY
DIRX
/XDIR
XDIR
YDIR
/PSHOST
PSHOST
POWER5
+6V
VDD1
VDD2
L402 NFM60R 3216
L401 NFM60R 3216
I451 BA025 +2.5V
C451 0.1 1005
C452 100/6.3 CEMC
C401 10/10 3225
C402 10/10 3225
C419 0.01 1005
C420 0.01 1005
R426 0
R427 0
R428 10K 4REN
L402 L401
R401 0 4REN
R402 10K
C403 0.01 1005
C404 0.01 1005
R440 0
R441 0
R443 100
R442 1K
R445 100
R444 100
R446 100
R447 100
R448 100
R449 100
R450 100
I403 74LV04A
C440 0.01 1005
I452 BA05SFP +5V
C454 0.1 1005
C455 100/6.3 CEMC
GND1
I404 SN74ACT04PW
C421 0.1 1005
R466 100
R467 100
R468 100
R469 100
R470 100 DWN
R475 100
R471 100 RGT
R472 100 XRGT
CLP1
SHENB
R403 100
R429 100
R404 56 4REN
R405 56 4REN
R406 56 4REN
R407 33
R408 100 4REN
R409 100 4REN
ENB1R
ENB2R
ENB3R
ENB4R
SHCLKR
XFRR
STSQOR
FRPR
RD9
RD8
RD7
RD6
RD5
RD4
RD3
RD2
RD1
RD0
RDX
RCLX
R497 100
R498 100
C405 0.01 1005
C406 0.01 1005
C407 0.01 1005
C408 0.01 1005
C409 0.01 1005
C410 0.01 1005
C411 0.01 1005
C412 0.01 1005
C413 0.01 1005
R431 33
R414 100 4REN
R415 100 4REN
R495 100
R496 100
R416 56
R417 56 4REN
R410 56 4REN
R411 56 4REN
R412 56 4REN
R413 33
I453 CDCVF2505
CLKIN
CLKOUT
1Y3
1Y1
1Y0
VDD
1Y2
GND
R432 33
R433 33
R434 33
R436 33
R437 33
C456 0.1 1005
GND1
L3EQ7050K0A 1401
VDD1-16
VDD2-17
TEST4
TEST1
TEST2
TEST3
GND-5
SELECT
HSYNC
VSYNC
HRESET0
VRESET0
HPLL
VDD2-12
DCLK
GND-14
VDD1-15
CLP1
CLP2
SHENB
ROUT9
ROUT8
GND-21
GND-22
GND-23
ROUT7
ROUT6
VDD2-26
ROUT5
ROUT4
ROUT3
ROUT2
GND-31
ROUT1
ROUT0
SHCLKR
VDD2-35
XFRR
STSQER
STSQOR
GND-39
FRPR
ENBX1R
ENBX2R
ENBX3R
VDD2-44
VDD1-45
ENBX4R
DXOUTR
CLXOUTR
GOUT9
GOUT8
GOUT7
GOUT6
VDD2-56
GOUT5
GOUT4
GOUT3
GOUT2
GOUT1
GOUT0
SHCLKG
GND-64
XFRG
VDD2-65
STSQEG
STSQOG
GND-73
FRPG
ENBX1G
ENBX2G
ENBX3G
VDD2-75
ENBX4G
DXOUTG
CLXOUTG
VDD2-80
GND-81
BOUT9
BOUT8
GND-84
BOUT7
BOUT6
VDD2-85
BOUT5
VDD1-132
VDD2-131
OSDBIN1
OSDBIN0
OSDGIN1
OSDGIN0
OSDRIN1
OSDRIN0
OSDSW
GND-123
RESET
SCS
SCLK
SDATA
ENBY2
ENBY1
CLYOUT
DYOUT
NRG
CLXOUTB
GND-112
GND-111
GND-110
VDD2-109
DXOUTB
ENBX4B
ENBX3B
ENBX2B
ENBX1B
VDD1-103
FRPB
GND-101
STSQOB
STSQEB
VDD2-98
XFRB
SHCLKB
BOUT0
BOUT1
GND-93
BOUT2
BOUT3
BOUT4
VDD2-89
R430 100
R435 100
LS_RESET
I402 RN5VD26CA-TR
OUT
VDD
GND
CP
NC
C430 0.33 3216
C431 0.01 1005
C417 0.01 1005
C418 0.01 1005
R425 10K 4REN
R424 10K 4REN
R423 100 4REN
C416 0.01 1005
R494 100
R422 100 4REN
C415 0.01 1005
C414 0.01 1005
R421 100 4REN
R420 33
R419 56 4REN
R418 56
C413 0.01 1005
BCLX
CLY
DY
NRG
BDX
ENB4B
ENB3B
ENB2B
ENB1B
FRPB
STSQOB
XFRB
SHCLKB
BD0
BD1
BD2
BD3
BD4
BD9
BD8
BD7
BD6
BD5
BUS4
SHENB
ENB1R
ENB2R
HCK1G
HCK2G
HCK1B
HCK2B
I406 SN74ACT244PW
R477 33
R478 33
R479 33
R480 33
R481 100
R482 100
R483 33
R484 33
C423 0.1 1005
CLR
ENB
ENB1G
ENB2G
HCK1R
HCK2R
ENB1B
ENB2B
NRG
PDX
GDX
BDX
HSTR
HSTG
HSTB
I407 SN74ACT04PW
R485 100
R486 100
R487 100
R488 100
R489 100
R490 100
C424 0.1 1005
PCG
VCK
I408 SN74LV74APW
R491 100
R492 100
C425 0.1 1005
VST
I409 TC74AC86FT
R473 100
C426 0.1 1005
LS_CLKB
LS_CLKR
LS_CLKG
BUSB1
BUSG1
BUS2
BUS1
BUSR1


for XGA PANEL
for Green Reverse
for SVGA PANEL
P501
CPC30FPORSH-LOW
P502
CPC24FPORSH-LOW
L3E60700DA
L3E01040F0A
THS4062IDR
BA4560F
PWB assembly DRIVE 6 (C3S3/C3XM3)

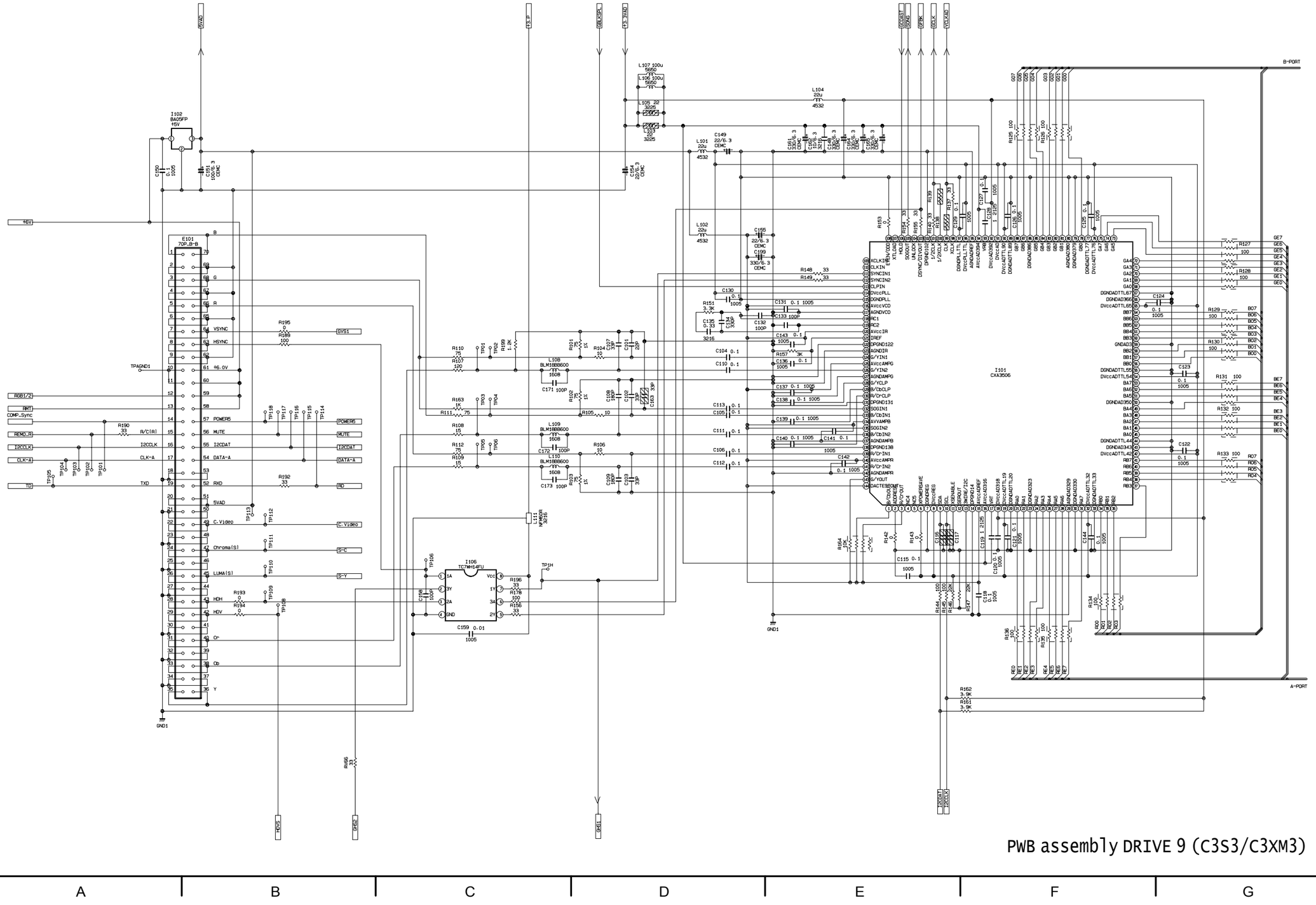

for XGA PANEL
for SVGA PANEL
for XGA PANEL
for SVGA PANEL
PWB assembly DRIVE 7 (C3S3/C3XM3)

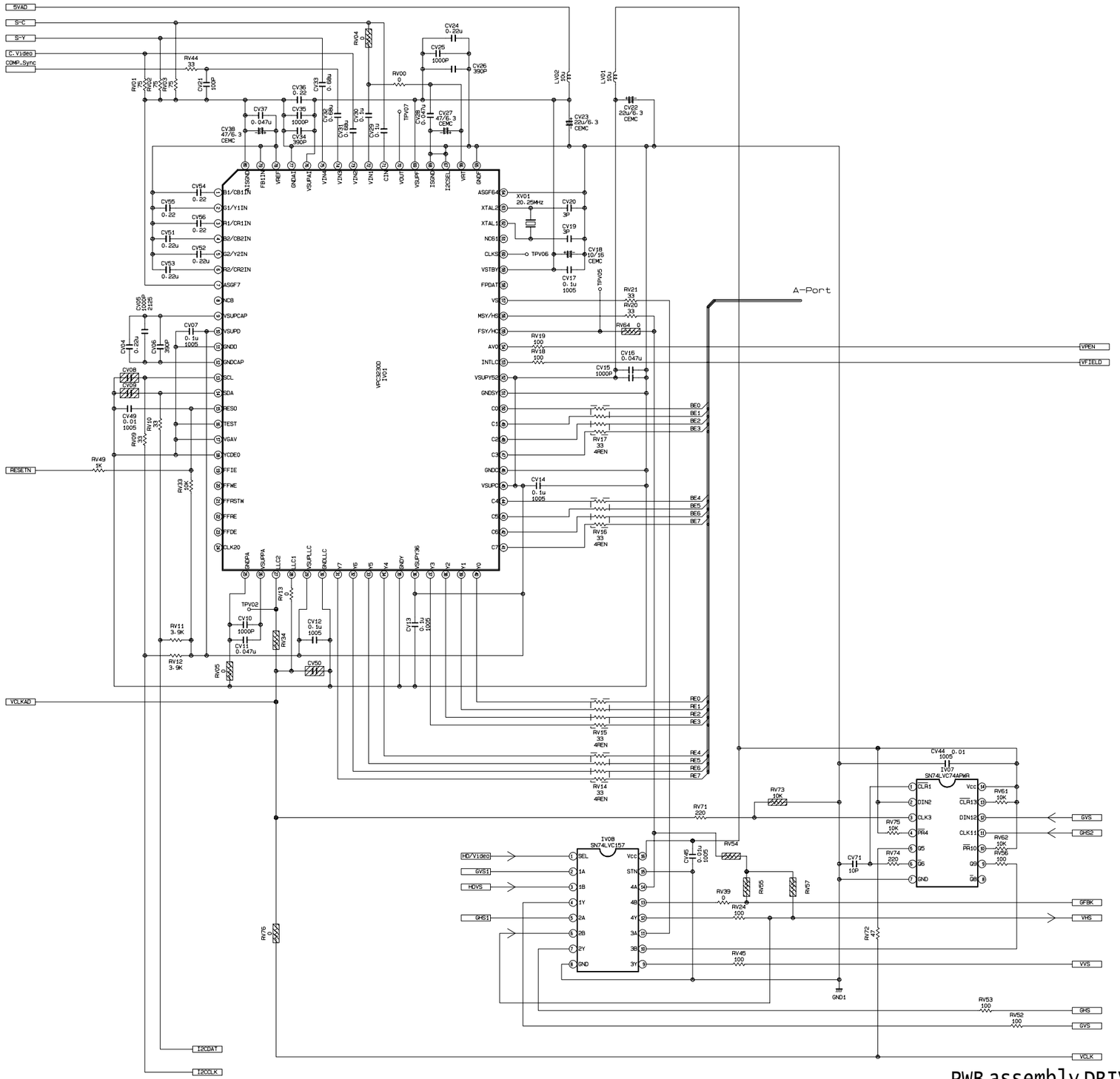
for XGA PANEL

for XGA PANEL

for SVGA PANEL

PWB assembly DRIVE 8 (C3S3/C3XM3)

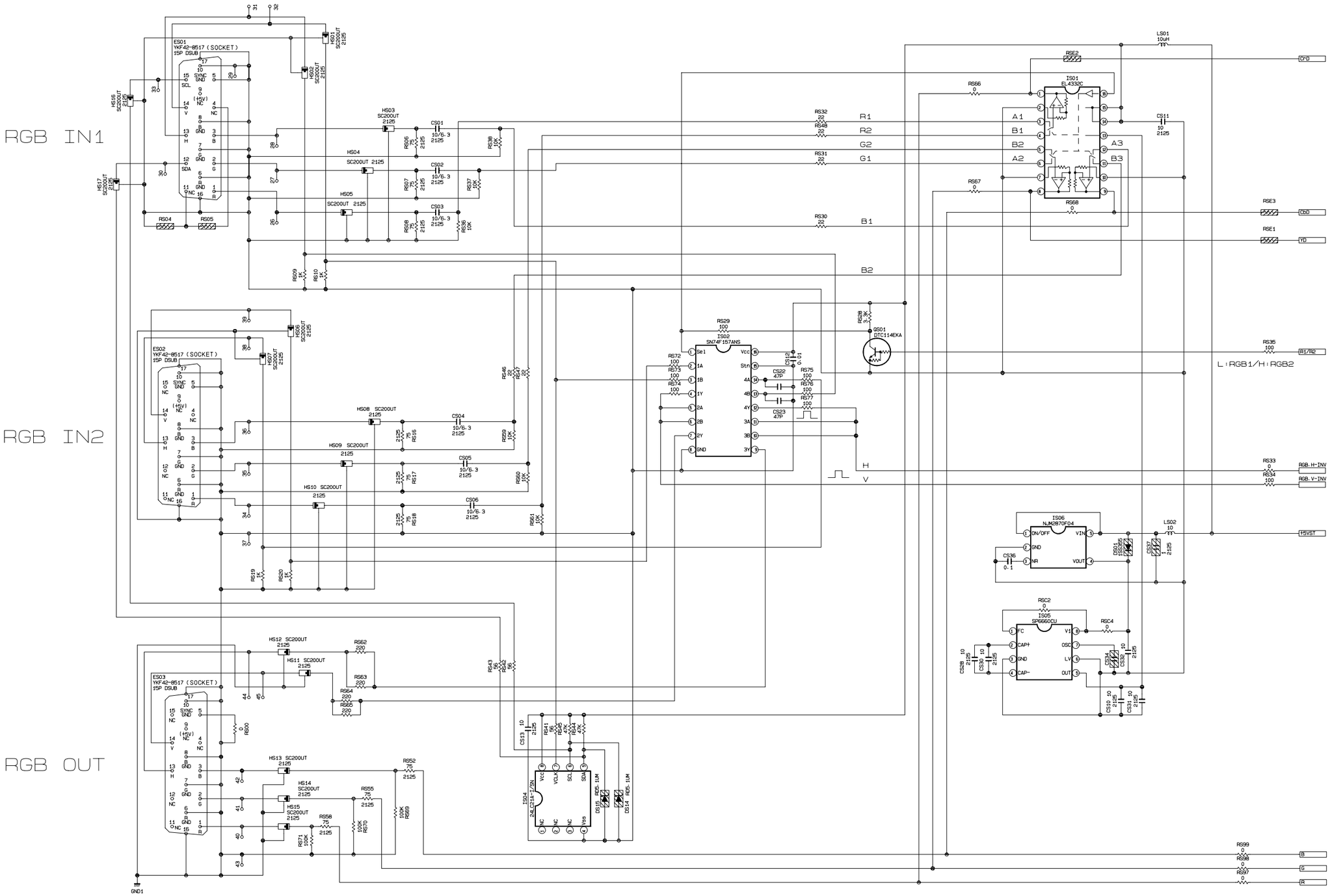

PWB assembly DRIVE 9 (C3S3/C3XM3)
I101 CX43506
I102 BA05FP
I105 TC7WH14FU
E101 70P_B-B
B-PORT
A-PORT
+6V
+6.0V
GND1
TPAGND1
VSYNC
HSYNC
POWERS
MUTE
I2CDAT
DATA-A
RXD
C.Video
S-C
S-Y
HDH
HDV
Cr
Cb
Y
R
G
B
A/C(R)
I2CCLK
CLK-A
TXD
5VAD
RMT
COMP_Sync
REMO_R
SCL
SDA
RESOUT
XRST
XCLK
XDAT


5VAD
S-C
S-Y
C.Video
COMP_Sync
RESETN
VCLKAD
I2CDAT
I2CCLK
VPEN
VFIELD
A-Port
GVS
GHS2
GFBK
VHS
VVS
GHS
GVS
VCLK
HD/V1Geo
6VS1
HDVS
GHS1
VR3R300
1V01
XV01
20.25MHz
IV08
SN74LVC157
IV07
SN74LVC74APWR
GND1
PWB assembly DRIVE 10 (C3S3/C3XM3)

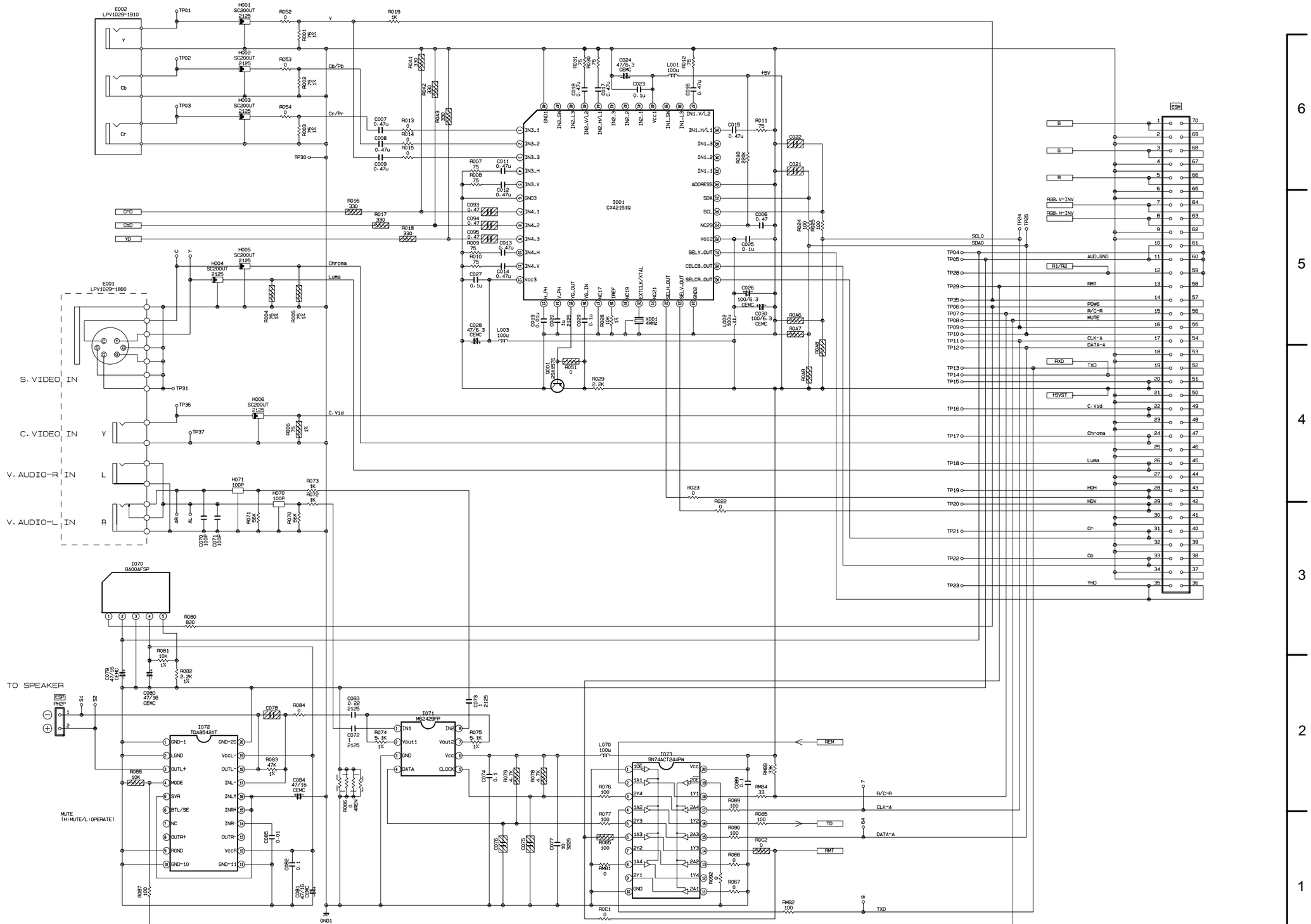
RGB IN1

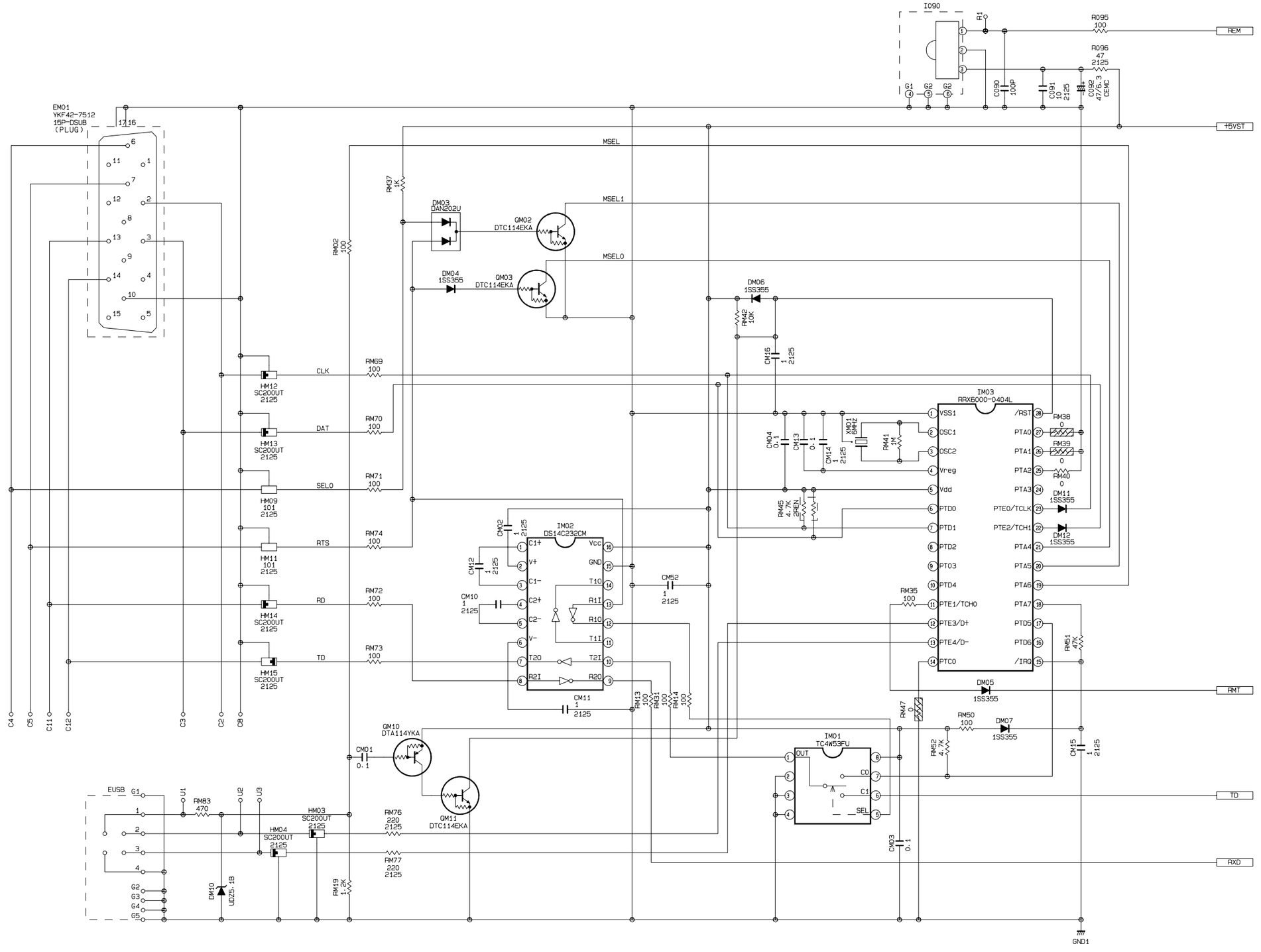
RGB IN2

RGB OUT

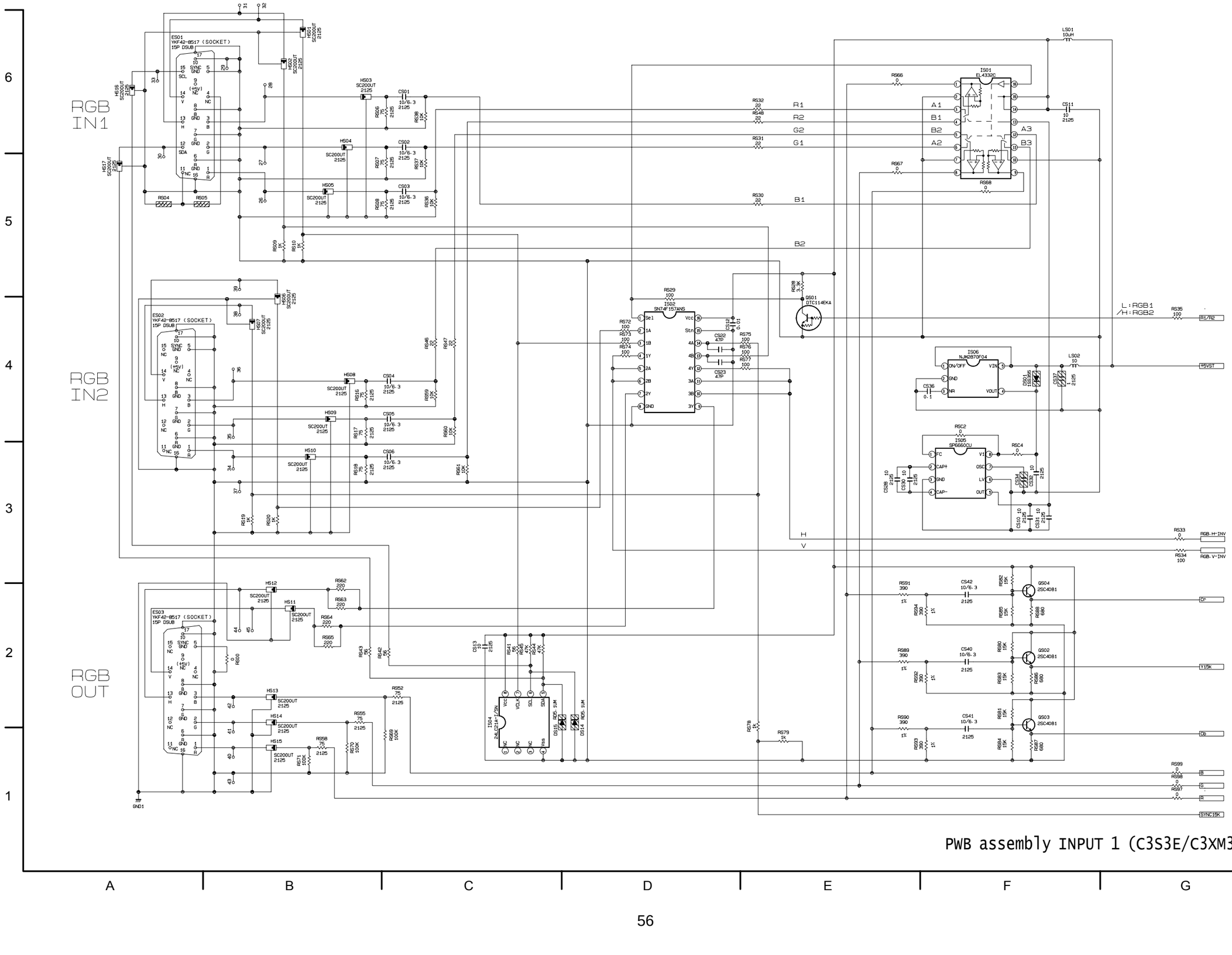


PWB assembly SIGNAL 1 (C3S3/C3XM3)

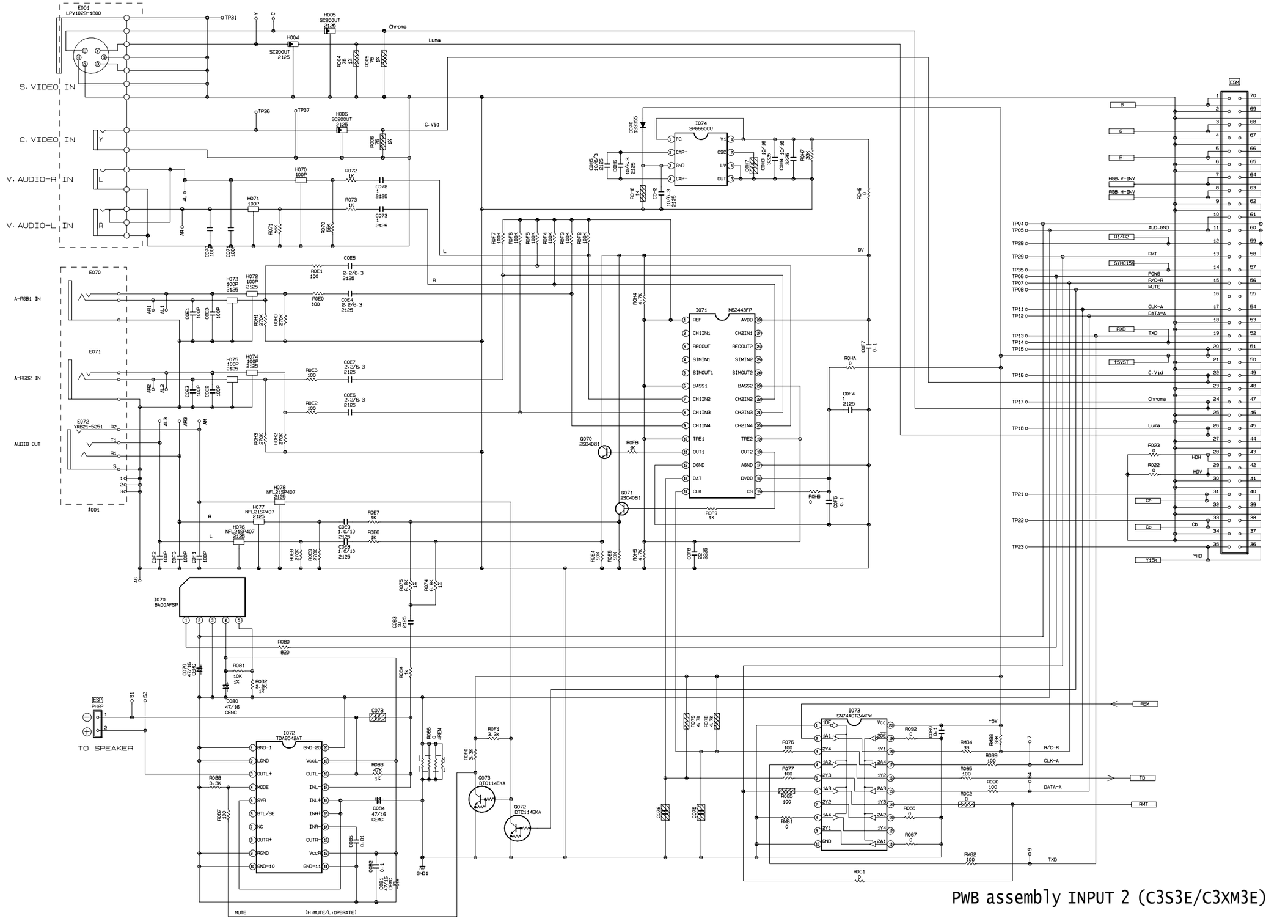

E002
LPV1029-1910
E001
LPV1029-1B00
I001
CXA2151Q
I070
BA00AFSP
I071
TDA8542AT
I072
M52429FP
I073
SN74ACT244PW
I074
ESP
S.VIDEO IN
C.VIDEO IN
V.AUDIO-R IN
V.AUDIO-L IN
TO SPEAKER
MUTE
(H:MUTE/L:OPERATE)
+5V
Y
Cb/Pb
Cr/Pr
Chroma
Luma
C.Vid
CrD
CbD
YD
REM
TXD
R/C-R
CLK-A
DATA-A
RMT
TD
SCL0
SDA0
AUD_GND
R1/R2
MUT
POWS
R/C-R
MUTE
CLK-A
DATA-A
RXD
TXD
H5VST
C.Vid
Chroma
Luma
HDH
HDV
Cr
Cb
YHD
RGB.V-INV
RGB.H-INV
ESM
PWB assembly SIGNAL 2 (C3S3/C3XM3)

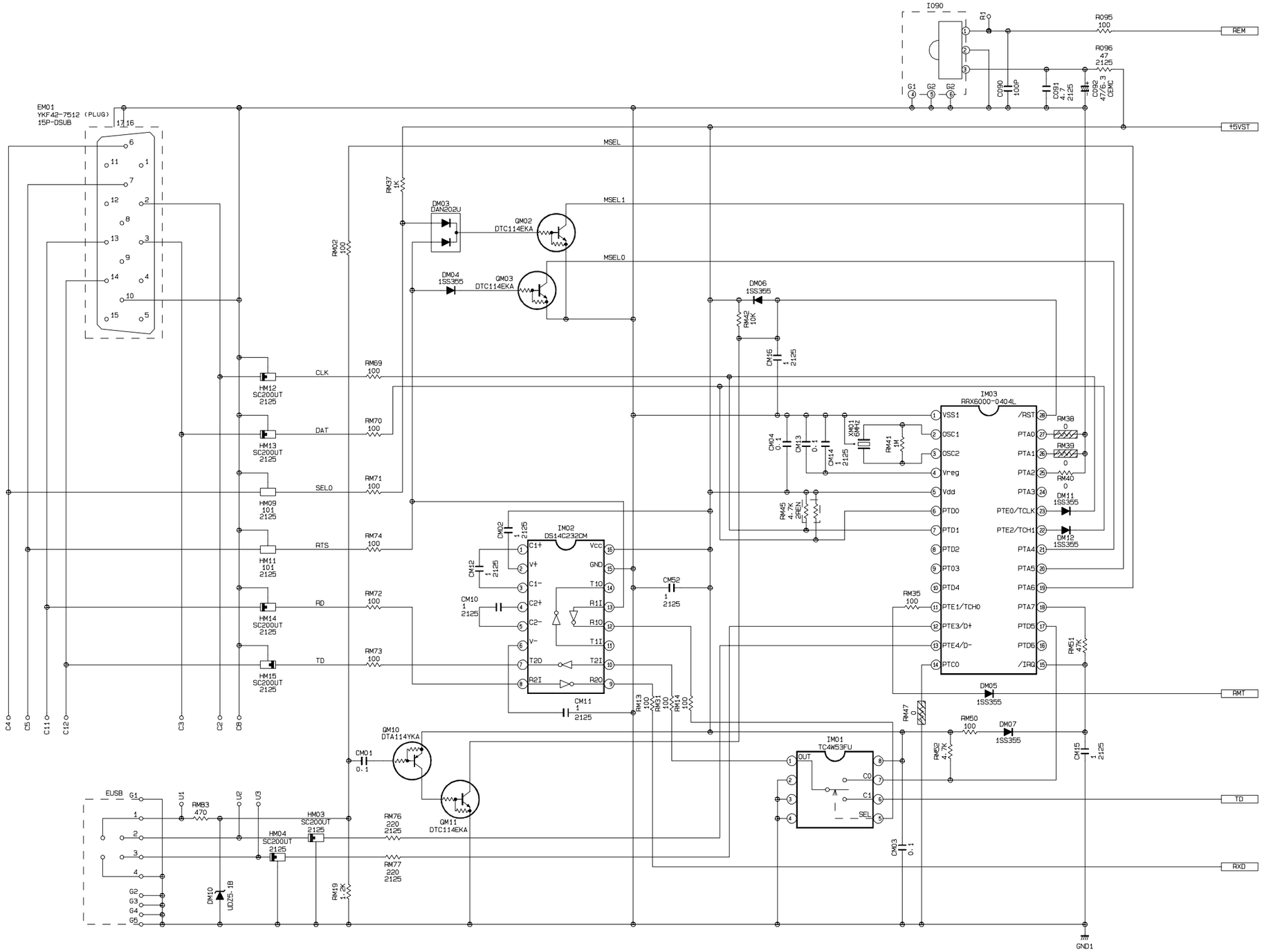


PWB assembly SIGNAL 3 (C3S3/C3XM3)



PWB assembly INPUT 1 (C3S3E/C3XM3E)

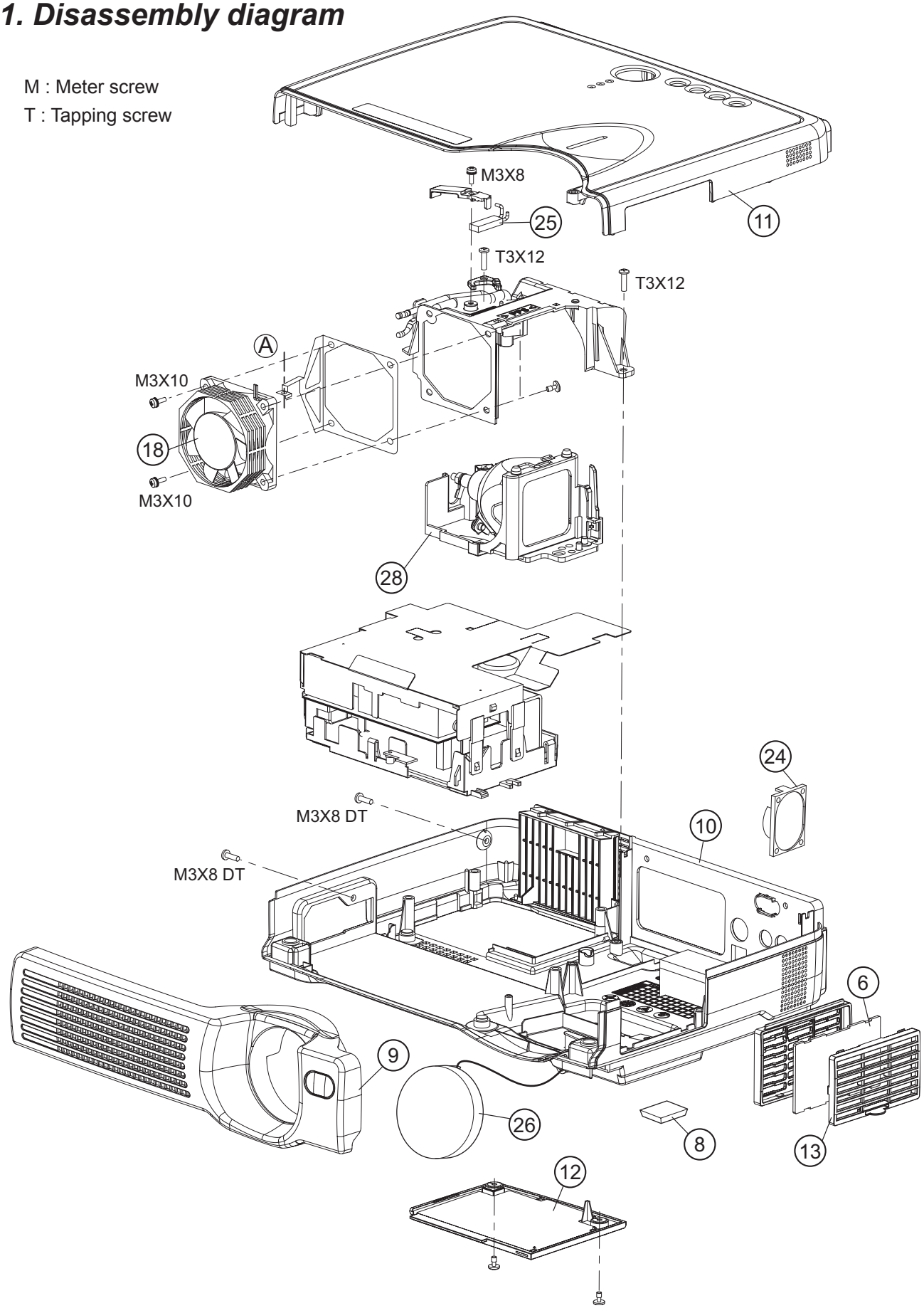

S. VIDEO IN
C. VIDEO IN
V. AUDIO-R IN
V. AUDIO-L IN
A-RGB1 IN
A-RGB2 IN
AUDIO OUT
TO SPEAKER
Chroma
Luma
C.Vid
9V
+5V
TP04
TP05
TP28
TP29
TP35
TP06
TP07
TP08
TP11
TP12
TP13
TP14
TP15
TP16
TP17
TP18
TP21
TP22
TP23
AUD_GND
RMT
PDWS
R/C-R
MUTE
CLK-A
DATA-A
RXD
TXD
H5VST
HDH
HDV
Cr
Cb
Y15K
YHD
REM
MUTE (H:MUTE/L:OPERATE)
PWB assembly INPUT 2 (C3S3E/C3XM3E)



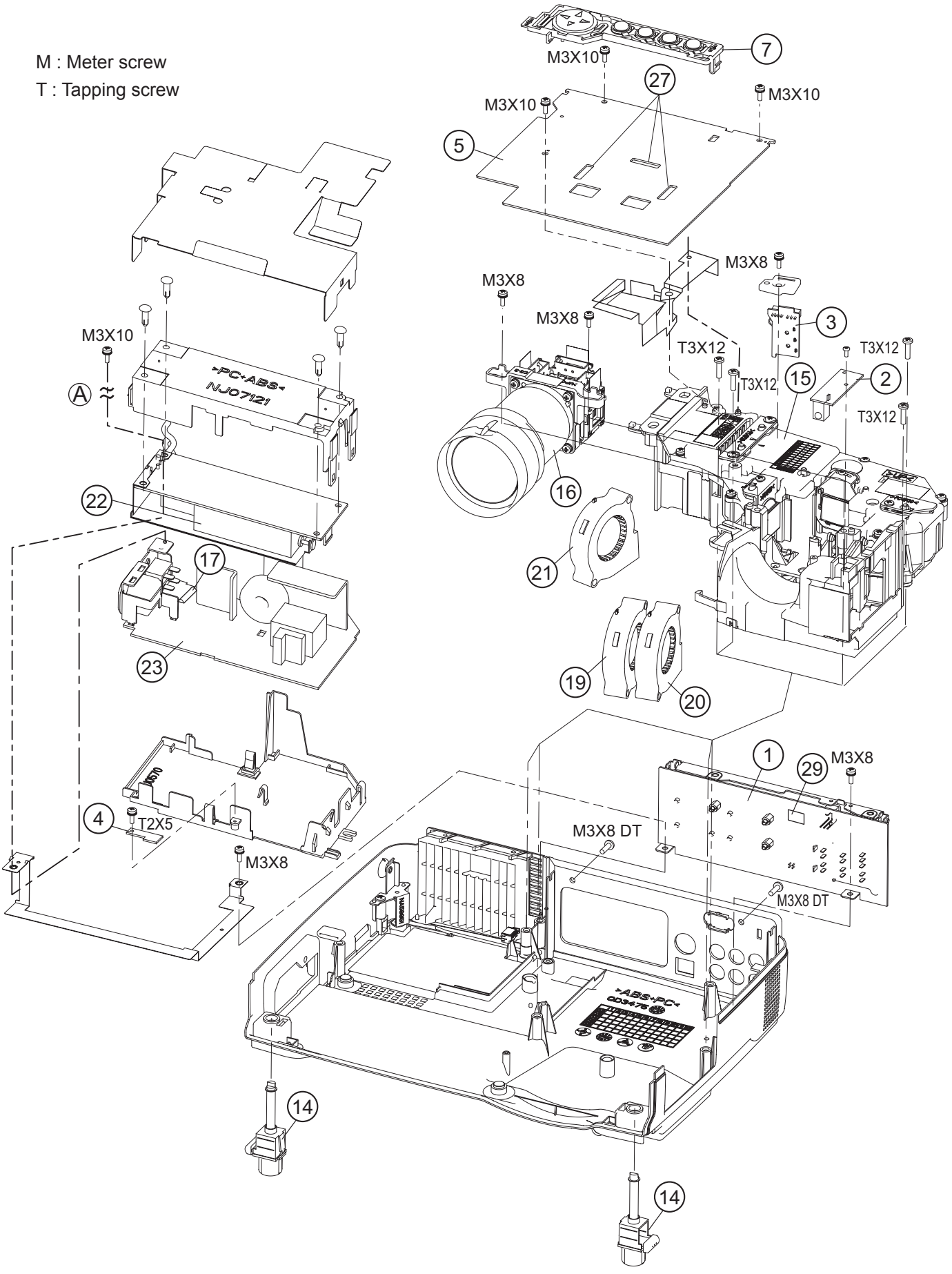
PWB assembly INPUT 3 (C3S3E/C3XM3E)

11. Disassembly diagram

M : Meter screw
T : Tapping screw



M : Meter screw
T : Tapping screw



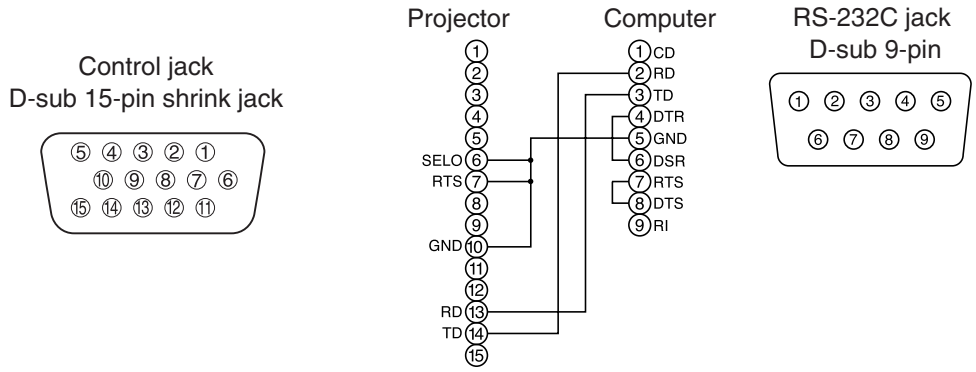
THE UPDATED PARTS LIST

FOR THIS MODEL IS

AVAILABLE ON ESTA

13. RS-232C communication

(1) Turn off the projector and computer power supplies and connect with the RS-232C cable.
(2) Turn on the computer power supply and after the computer has started up, turn on the projector power supply.



Communications setting

19200bps, 8N1

1 Protocol

Consist of header (7 bytes) + command data (6 bytes).

2 Header

BE + EF + 03 + 06 + 00 + CRC_low + CRC_high
CRC_low : Lower byte of CRC flag for command data.
CRC_high : Upper byte of CRC flag for command data.

3 Command data

Command data chart

byte_0	byte_1	byte_2	byte_3	byte_4	byte_5
Action		Type		Setting code	
low	high	low	high	low	high

Action (byte_0 - 1)

Action	Classification	Content
1	SET	Change setting to desired value.
2	GET	Read projector internal setup value.
4	INCREMENT	Increment setup value by 1.
5	DECREMENT	Decrement setup value by 1.
6	EXECUTE	Run a command.

Requesting projector status (Get command)
(1) Send the request code Header + Command data ('02H'+'00H'+ type (2 bytes) +'00H'+'00H') from the computer to the projector.
(2) The projector returns the response code '1DH'+ data (2 bytes) to the computer.

Changing the projector settings (Set command)
(1) Send the setting code Header + Command data ('01H'+'00H'+ type (2 bytes) + setting code (2 bytes)) from the computer to the projector.
(2) The projector changes the setting based on the above setting code.
(3) The projector returns the response code '06H' to the computer.

Using the projector default settings (Reset Command)
(1) The computer sends the default setting code Header + Command data ('06H'+'00H'+ type (2 bytes) +'00H'+'00H') to the projector.
(2) The projector changes the specified setting to the default value.
(3) The projector returns the response code '06H' to the computer.

Increasing the projector setting value (Increment command)
(1) The computer sends the increment code Header + Command data ('04H'+'00H'+ type (2 bytes) +'00H'+'00H') to the projector.
(2) The projector in creases the setting value on the above setting code.
(3) The projector returns the response code '06H' to the computer.

Decreasing the projector setting value (Decrement command)
(1) The computer sends the decrement code Header + Command data ('05H'+'00H'+ type (2 bytes) +'00H' + '00H') to the projector.
(2) The projector decreases the setting value on the above setting code.
(3) The projector returns the response code '06H' to the computer.

When the projector cannot understand the command
When the projector cannot understand a command received from a computer, the projector sends the error code'15H' to the computer.
The projector sometimes cannot receive a command from a computer correctly. In this case, the projector does not execute the command and sends the error code '15H' to the computer. If the computer receives the error code '15H', please resend the same command once again.

When the projector cannot execute the command
When the projector cannot execute a command received from a computer, the projector sends the error code '1cH'+'xxxxH' to the computer.
When the data length of a command exceeds the length indicated by the data length code of the command, the projector ignores the exceeded portion of the data. And, when the data length of a command is short of the length indicated by the data length code of the command, the projector sends the error code '1ch'+'xxxxH' to the computer.

NOTE • Operation cannot be guaranteed when the projector receives an undefined command or data.
- Provide an interval of at least 40ms between the response code and any other code.
- The projector outputs test data when the power supply is switched ON, and when the lamp is lit. Ignore this data.
- Commands are not accepted during warm-up.

Command data chart

Names	Operation type		Header	CRC	Command data		
					Action	Type	Setting code
Blank Color	Set	Blue	BE EF 03 06 00	CB D3	01 00	00 30	03 00
		White	BE EF 03 06 00	6B D0	01 00	00 30	05 00
		Black	BE EF 03 06 00	9B D0	01 00	00 30	06 00
		MyScreen	BE EF 03 06 00	FB CA	01 00	00 30	20 00
		ORIGNAL	BE EF 03 06 00	FB E2	01 00	00 30	40 00
	Get		BE EF 03 06 00	08 D3	02 00	00 30	00 00
Mirror	Set	Normal	BE EF 03 06 00	C7 D2	01 00	01 30	00 00
		H Inverse	BE EF 03 06 00	57 D3	01 00	01 30	01 00
		V Inverse	BE EF 03 06 00	A7 D3	01 00	01 30	02 00
		H&V Inverse	BE EF 03 06 00	37 D2	01 00	01 30	03 00
	Get		BE EF 03 06 00	F4 D2	02 00	01 30	00 00
Freeze	Set	Normal	BE EF 03 06 00	83 D2	01 00	02 30	00 00
		Freeze	BE EF 03 06 00	13 D3	01 00	02 30	01 00
	Get		BE EF 03 06 00	B0 D2	02 00	02 30	00 00
Startup	Set	ORIGNAL	BE EF 03 06 00	0B D2	01 00	04 30	00 00
		OFF	BE EF 03 06 00	9B D3	01 00	04 30	01 00
		MyScreen	BE EF 03 06 00	CB CB	01 00	04 30	20 00
	Get		BE EF 03 06 00	38 D2	02 00	04 30	00 00
Language	Set	English	BE EF 03 06 00	F7 D3	01 00	05 30	00 00
		Français	BE EF 03 06 00	67 D2	01 00	05 30	01 00
		Deutsch	BE EF 03 06 00	97 D2	01 00	05 30	02 00
		Español	BE EF 03 06 00	07 D3	01 00	05 30	03 00
		Italiano	BE EF 03 06 00	37 D1	01 00	05 30	04 00
		Norsk	BE EF 03 06 00	A7 D0	01 00	05 30	05 00
		Nederlands	BE EF 03 06 00	57 D0	01 00	05 30	06 00
		Português	BE EF 03 06 00	C7 D1	01 00	05 30	07 00
		日本語	BE EF 03 06 00	37 D4	01 00	05 30	08 00
		中文	BE EF 03 06 00	A7 D5	01 00	05 30	09 00
		한글	BE EF 03 06 00	57 D5	01 00	05 30	0A 00
	Get		BE EF 03 06 00	C4 D3	02 00	05 30	00 00
Magnify	Get		BE EF 03 06 00	7C D2	02 00	07 30	00 00
	Increment		BE EF 03 06 00	1A D2	04 00	07 30	00 00
	Decrement		BE EF 03 06 00	CB D3	05 00	07 30	00 00
Auto off	Get		BE EF 03 06 00	08 86	02 00	10 31	00 00
	Increment		BE EF 03 06 00	6E 86	04 00	10 31	00 00
	Decrement		BE EF 03 06 00	BF 87	05 00	10 31	00 00
Brightness Reset	Execute		BE EF 03 06 00	58 D3	06 00	00 70	00 00
Contrast Reset	Execute		BE EF 03 06 00	A4 D2	06 00	01 70	00 00
V.Position Reset	Execute		BE EF 03 06 00	E0 D2	06 00	02 70	00 00

Command data chart

Names	Operation type		Header	CRC	Command data		
					Action	Type	Setting code
H.Position Reset	Execute		BE EF 03 06 00	IC D3	06 00	03 70	00 00
H.Size Reset	Execute		BE EF 03 06 00	68 D2	06 00	04 70	00 00
Color Balance R Reset	Execute		BE EF 03 06 00	94 D3	06 00	05 70	00 00
Color Balance B Reset	Execute		BE EF 03 06 00	D0 D3	06 00	06 70	00 00
Sharpness Reset	Execute		BE EF 03 06 00	C4 D0	06 00	09 70	00 00
Color Reset	Execute		BE EF 03 06 00	80 D0	06 00	0A 70	00 00
Tint Reset	Execute		BE EF 03 06 00	7C D1	06 00	0B 70	00 00
Keystone_V Reset	Execute		BE EF 03 06 00	08 D0	06 00	0C 70	00 00
Keystone_H Reset	Execute		BE EF 03 06 00	98 D8	06 00	20 70	00 00
Auto Adjust	Execute		BE EF 03 06 00	91 D0	06 00	0A 20	00 00
Lamp Time Reset	Execute		BE EF 03 06 00	58 DC	06 00	30 70	00 00
Filter Time Reset	Execute		BE EF 03 06 00	98 C6	06 00	40 70	00 00
Blank on/off	Set	off	BE EF 03 06 00	FB D8	01 00	20 30	00 00
		on	BE EF 03 06 00	6B D9	01 00	20 30	01 00
	Get		BE EF 03 06 00	C8 D8	02 00	20 30	00 00
Error Status	Get		BE EF 03 06 00	D9 D8	02 00	20 60	00 00
			(Example of Return) 00 00 (Normal) 01 00 (Cover-error) 02 00 (Fan-error) 03 00 (Lamp-error) 04 00 (Temp-error) 05 00 (Air flow-error) 06 00 (Lamp-Time-over) 07 00 (Cool-error) 08 00 (Filter-Error)				
Power	Set	OFF	BE EF 03 06 00	2A D3	01 00	00 60	00 00
		ON	BE EF 03 06 00	BA D2	01 00	00 60	01 00
	Get		BE EF 03 06 00	19 D3	02 00	00 60	00 00
Input Source	Set	RGB1	BE EF 03 06 00	FE D2	01 00	00 20	00 00
		RGB2	BE EF 03 06 00	3E D0	01 00	00 20	04 00
		Video	BE EF 03 06 00	6E D3	01 00	00 20	01 00
		SVideo	BE EF 03 06 00	9E D3	01 00	00 20	02 00
		Component	BE EF 03 06 00	AE D1	01 00	00 20	05 00
	Get		BE EF 03 06 00	CD D2	02 00	00 20	00 00
Volume	Get		BE EF 03 06 00	31 D3	02 00	01 20	00 00
	Increment		BE EF 03 06 00	57 D3	04 00	01 20	00 00
	Decrement		BE EF 03 06 00	86 D2	05 00	01 20	00 00
Mute	Set	Normal	BE EF 03 06 00	46 D3	01 00	02 20	00 00
		Mute	BE EF 03 06 00	D6 D2	01 00	02 20	01 00
	Get		BE EF 03 06 00	75 D3	02 00	02 20	00 00
Brightness	Get		BE EF 03 06 00	89 D2	02 00	03 20	00 00
	Increment		BE EF 03 06 00	EF D2	04 00	03 20	00 00
	Decrement		BE EF 03 06 00	3E D3	05 00	03 20	00 00

Command data chart

Names	Operation type		Header	CRC	Command data		
					Action	Type	Setting code
Contrast	Get		BE EF 03 06 00	FD D3	02 00	04 20	00 00
	Increment		BE EF 03 06 00	9B D3	04 00	04 20	00 00
	Decrement		BE EF 03 06 00	4A D2	05 00	04 20	00 00
Color Balance R	Get		BE EF 03 06 00	01 D2	02 00	05 20	00 00
	Increment		BE EF 03 06 00	67 D2	04 00	05 20	00 00
	Decrement		BE EF 03 06 00	B6 D3	05 00	05 20	00 00
Color Balance B	Get		BE EF 03 06 00	45 D2	02 00	06 20	00 00
	Increment		BE EF 03 06 00	23 D2	04 00	06 20	00 00
	Decrement		BE EF 03 06 00	F2 D3	05 00	06 20	00 00
Keystone_V	Get		BE EF 03 06 00	B9 D3	02 00	07 20	00 00
	Increment		BE EF 03 06 00	DF D3	04 00	07 20	00 00
	Decrement		BE EF 03 06 00	0E D2	05 00	07 20	00 00
Keystone_H	Get		BE EF 03 06 00	E9 D0	02 00	0B 20	00 00
	Increment		BE EF 03 06 00	8F D0	04 00	0B 20	00 00
	Decrement		BE EF 03 06 00	5E D1	05 00	0B 20	00 00
Aspect	Set	4:3	BE EF 03 06 00	9E D0	01 00	08 20	00 00
		16:9	BE EF 03 06 00	0E D1	01 00	08 20	01 00
		Small	BE EF 03 06 00	FE D1	01 00	08 20	02 00
	Get		BE EF 03 06 00	AD D0	02 00	08 20	00 00
Picture Position at 16 : 9 or Small	Set	Default	BE EF 03 06 00	62 D1	01 00	09 20	00 00
		Bottom	BE EF 03 06 00	F2 D0	01 00	09 20	01 00
		Top	BE EF 03 06 00	02 D0	01 00	09 20	02 00
	Get		BE EF 03 06 00	51 D1	02 00	09 20	00 00
V.Position	Get		BE EF 03 06 00	0D 83	02 00	00 21	00 00
	Increment		BE EF 03 06 00	6B 83	04 00	00 21	00 00
	Decrement		BE EF 03 06 00	BA 82	05 00	00 21	00 00
H.Position	Get		BE EF 03 06 00	F1 82	02 00	01 21	00 00
	Increment		BE EF 03 06 00	97 82	04 00	01 21	00 00
	Decrement		BE EF 03 06 00	46 83	05 00	01 21	00 00
H.Size	Get		BE EF 03 06 00	B5 82	02 00	02 21	00 00
	Increment		BE EF 03 06 00	D3 82	04 00	02 21	00 00
	Decrement		BE EF 03 06 00	02 83	05 00	02 21	00 00
H.Phase	Get		BE EF 03 06 00	49 83	02 00	03 21	00 00
	Increment		BE EF 03 06 00	2F 83	04 00	03 21	00 00
	Decrement		BE EF 03 06 00	FE 82	05 00	03 21	00 00
Sharpness	Get		BE EF 03 06 00	F1 72	02 00	01 22	00 00
	Increment		BE EF 03 06 00	97 72	04 00	01 22	00 00
	Decrement		BE EF 03 06 00	46 73	05 00	01 22	00 00
Color	Get		BE EF 03 06 00	B5 72	02 00	02 22	00 00
	Increment		BE EF 03 06 00	D3 72	04 00	02 22	00 00
	Decrement		BE EF 03 06 00	02 73	05 00	02 22	00 00

Command data chart

Names	Operation type		Header	CRC	Command data		
					Action	Type	Setting code
Tint	Get		BE EF 03 06 00	49 73	02 00	03 22	00 00
	Increment		BE EF 03 06 00	2F 73	04 00	03 22	00 00
	Decrement		BE EF 03 06 00	FE 72	05 00	03 22	00 00
Video Format	Set	Auto	BE EF 03 06 00	9E 75	01 00	00 22	0A 00
		NTSC	BE EF 03 06 00	FE 71	01 00	00 22	04 00
		PAL	BE EF 03 06 00	6E 70	01 00	00 22	05 00
		SECAM	BE EF 03 06 00	6E 75	01 00	00 22	09 00
		NTSC 4.43	BE EF 03 06 00	5E 72	01 00	00 22	02 00
		M-PAL	BE EF 03 06 00	FE 74	01 00	00 22	08 00
		N-PAL	BE EF 03 06 00	0E 71	01 00	00 22	07 00
	Get		BE EF 03 06 00	0D 73	02 00	00 22	00 00
HDTV	Set	1080i	BE EF 03 06 00	F2 73	01 00	05 22	00 00
		1035i	BE EF 03 06 00	62 72	01 00	05 22	01 00
	Get		BE EF 03 06 00	C1 73	02 00	05 22	00 00
Sync on G	Set	off	BE EF 03 06 00	CB D0	01 00	08 30	01 00
		on	BE EF 03 06 00	5B D1	01 00	08 30	00 00
	Get		BE EF 03 06 00	68 D1	02 00	08 30	00 00
WHISPER	Set	NORMAL	BE EF 03 06 00	3B 23	01 00	00 33	00 00
		WHISPER	BE EF 03 06 00	AB 22	01 00	00 33	01 00
	Get		BE EF 03 06 00	08 23	02 00	00 33	00 00
GAMMA	Set	NORMAL	BE EF 03 06 00	C7 F0	01 00	A1 30	00 00
		CINEMA	BE EF 03 06 00	57 F1	01 00	A1 30	01 00
		DYNAMIC	BE EF 03 06 00	A7 F1	01 00	A1 30	02 00
	Get		BE EF 03 06 00	F4 F0	02 00	A1 30	00 00
Over Scan	Set	Large	BE EF 03 06 00	C2 71	01 00	09 22	02 00
		Middle	BE EF 03 06 00	32 71	01 00	09 22	01 00
		Small	BE EF 03 06 00	A2 70	01 00	09 22	00 00
	Get		BE EF 03 06 00	91 70	02 00	09 22	00 00
MyScreen Size	Set	Full	BE EF 03 06 00	43 D6	01 00	12 30	00 00
		X1	BE EF 03 06 00	D3 D7	01 00	12 30	01 00
	Get		BE EF 03 06 00	70 D6	02 00	12 30	00 00
MyScreen Lock	Set	off	BE EF 03 06 00	3B EF	01 00	C0 30	00 00
		on	BE EF 03 06 00	AB EE	01 00	C0 30	01 00
	Get		BE EF 03 06 00	08 EF	02 00	C0 30	00 00
Lamp Time	Get		BE EF 03 06 00	C2 FF	02 00	90 10	00 00
Filter Time	Get		BE EF 03 06 00	C2 F0	02 00	A0 10	00 00

HITACHI

Hitachi, Ltd. Tokyo, Japan
International Sales Division
THE HITACHI ATAGO BUILDING,
No. 15 –12 Nishi Shinbashi, 2 – Chome,
Minato – Ku, Tokyo 105-8430, Japan.
Tel: 03 35022111

HITACHI EUROPE LTD,
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire
SL6 8YA
UNITED KINGDOM
Tel: 01628 643000
Fax: 01628 643400
Email: **consumer-service@hitachi-eu.com**

HITACHI EUROPE S.A.
364 Kifissias Ave. & 1, Delfon Str.
152 33 Chalandri
Athens
GREECE
Tel: 1-6837200
Fax: 1-6835964
Email: **service.hellas@hitachi-eu.com**

HITACHI EUROPE GmbH
Munich Office
Dornacher Strasse 3
D-85622 Feldkirchen bei München
GERMANY
Tel: +49-89-991 80-0
Fax: +49-89-991 80-224
Hotline: +49-180-551 25 51 (12ct/min)
Email: **HSE-DUS.service@hitachi-eu.com**

HITACHI EUROPE S.A.
Gran Via Carlos III, 86, planta 5
Edificios Trade - Torre Este
08028 Barcelona
SPAIN
Tel: 93 409 2550
Fax: 93 491 3513
Email: **atencion.cliente@hitachi-eu.com**

HITACHI EUROPE srl
Via Tommaso Gulli N.39, 20147
Milano, Italia
ITALY
Tel: +39 02 487861
Tel: +39 02 38073415 Servizio Clienti
Fax: +39 02 48786381/2
Email: customerservice.italy@hitachi-eu.com

HITACHI Europe AB
Box 77 S-164 94 Kista
SWEDEN
Tel: +46 (0) 8 562 711 00
Fax: +46 (0) 8 562 711 13
Email: **csgswe@hitachi-eu.com**

HITACHI EUROPE S.A.S
Lyon Office
B.P. 45, 69671 BRON CEDEX
FRANCE
Tel: 04 72 14 29 70
Fax: 04 72 14 29 99
Email: **france.consommateur@hitachi-eu.com**

HITACHI EUROPE LTD (Norway) AB
STRANDVEIEN 18
1366 Lysaker
NORWAY
Tel: 67 5190 30
Fax: 67 5190 32
Email: **csgnor@hitachi-eu.com**

HITACH EUROPE AB
Egebækgård
Egebækvej 98
DK-2850 Nærum
DENMARK
Tel: +45 43 43 6050
Fax: +45 43 60 51
Email: **csgnor@hitachi-eu.com**

HITACHI EUROPE AB
Neopoli / Niemenkatu 73
FIN-15140 Lahti
FINLAND
Tel : +358 3 8858 271
Fax: +358 3 8858 272
Email: **csgnor@hitachi-eu.com**

Hitachi Europe Ltd
Bergensesteenweg 421
1600 Sint-Pieters-Leeuw
BELGIUM
Tel: +32 2 363 99 01
Fax: +32 2 363 99 00
Email: **sofie.van.bom@hitachi-eu.com**

HITACHI EUROPE LTD
Na Sychrove 975/8
101 27 Praha 10 – Bohdalec
CZECH REPUBLIC
Tel: +420 267 212 383
Fax: +420 267 212 385
Email: **csgnor@hitachi-eu.com**

www.hitachidigitalmedia.com